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ABSTRACT

The goals of the Trans European Mobility Program for University Students (TEMPUS) project include developing curriculum and implementing language and culture training programs with a focus on German and Japanese, and training engineers who have a global perspective. This document contains an executive summary in addition to the full length report on the accomplishments of the project. The project report provides an overview of project activities and accomplishments, a section that traces the project from problem definition to project conclusion and discusses project pitfalls. Additionally, information on the background and origins of the project organized by phases, a full description of the project and its workshops, and evaluation and project results are provided. The majority of the document is comprised of three appendices. Appendix 1 contains eight exhibits, including such areas as: college of engineering student demographics, International Engineering Program (IEP) schedule, both the German focus and the Japanese focus course descriptions, and companies utilizing IEP students in overseas internships. Appendix 2 discusses the course syllabi for both the German and Japanese language training. Appendix 3 presents course evaluations submitted by the student participants on the effectiveness of the the project. (DDR)

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DEVELOPING AND IMPLEMENTING AN INTERNATIONAL ENGINEERING PROGRAM

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NOVEMBER 1994

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Grant Number: P116B10595

Project Dates: September 1, 1991 to August 31, 1994

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Grant Award:

Year 1	$ 69,759
Year 2	132,732
Year 3	63,881
Total	$266,372

Report Title: Developing and Implementing an International Engineering Program

SUMMARY

This project, International Engineering - A Focus on Manufacturing, has three objectives: to fully develop, implement and institutionalize a unique international engineering program that includes activities related to manufacturing; 2) to develop curriculum and to implement language and culture training programs with a focus on German and Japanese; and 3) to train engineers who have a global perspective. Activities undertaken, such as student recruitment, course development, a capstone international design clinic, co-op (internship) experience, and the TEMPUS program with a focus on manufacturing to fulfill project objectives, are described in this report. Project activities and outcomes achieved were evaluated. Problems encountered and solutions explored are presented. Institutionalizing the program to include continued internal funding and support is discussed. Dissemination plans, which include brochures, a project report, and scholarly papers, are described.

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Report Title: Developing and Implementing an International Engineering Program

EXECUTIVE SUMMARY

Project Title: International Engineering -- A Focus on Manufacturing

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PROJECT OVERVIEW

This project, "International Engineering - A Focus on Manufacturing," began in September 1991. The objectives of this three-year project were:

- To fully develop, implement and institutionalize a unique International Engineering Program (IEP).
- To develop curriculum and to implement language and culture training programs with a focus on German and Japanese.
- To train engineers to have a global perspective.

The program was supplemented with additional funding for one year to focus on a program called TEMPUS (Trans European Mobility Program for University Students). The focus of the TEMPUS was on microelectronics education, an area critical to the manufacturing industry.

Several groups were served as a result of this project. These included students who actually participated during the first three years of the International Engineering Program at the University of Cincinnati, College of Engineering; faculty members who designed and implemented the various courses associated with the program; industry groups, both in the U.S. and overseas, that provided co-op (internship) opportunities for the students in the program; other University of Cincinnati colleges that are considering implementation of similar international programs; and finally, universities in the U.S. and overseas that may be interested in considering similar programs.

Outcomes include: specific activities undertaken to meet the objectives, problems encountered and solutions devised to resolve these problems, evaluation of the outcomes, suggested approaches for other universities and colleges considering similar programs, evaluation of various activities, and plans for continuation and dissemination.

PURPOSE

To understand the objectives and the approach for this undertaking, it is essential to define and establish the need for the program. This type of an understanding is also essential to provide a rationale for others who may adapt this program for their own university or college.

The United States is entering a "new world order", without its customary leadership in technology, industry and economy. To compete in the global market, American engineers must be possess the

ability to adapt and function to work environments of other cultures -- primarily our competitors in Germany and Japan. In a modern global economy, international trade is essential for continued economic growth of a nation. Regarding the engineering profession, these concerns dictate an increased need for individuals not only with strong technical backgrounds, but also with the ability to function and flourish in multi-cultural competitive global environments.

The College of Engineering, with support from the University President, undertook activities to fully develop, implement, and institutionalize an international program that includes appropriate language, culture and history training, a design clinic with international perspective, and a five-month internship experience either in Japan or Germany.

BACKGROUND AND ORIGINS

The origins of the program could be traced to the tradition of innovation in the College of Engineering. As an example, co-operative education (co-op) was established at the University of Cincinnati, College of Engineering, in 1906. It was the first such educational program in the nation. Since then, co-op has become the largest mandatory program of any public engineering school in the country. The International Engineering Program was just another undertaking in the innovative spirit of co-op education.

For the IEP to be implemented, a number of changes were made. These related to: language, culture and history curriculum development, changes to co-op schedules and engineering curriculum, development of co-op jobs overseas, and funding support for many of the program activities. The grant provided by FIPSE helped lay a strong foundation for this unique undertaking.

Industries that included transplant companies from Japan and Germany and U.S. companies with international operations have participated in the program by accepting co-op students in the U.S. and overseas. The University Administration pledged personal and financial support.

PROJECT DESCRIPTION

There are now more than 80 students enrolled in the IEP. Recruiting activities include informational meetings for high school counselors and teachers, mailing brochures to all students who apply for admission to the College, announcements to the German community through the Goethe Institute and the UC Germanic Language Department, and informational meetings with the freshman class.

Academic standards for admission to the IEP have been set at 3.0 out of 4.0, and enrollment is limited to 30. Students apply for admission during the spring quarter of their freshman year.

The following courses were developed for the program: Introduction to International Engineering, Intensive Language courses for both Japanese and German, German Speaking World I and II (language maintenance), and a Japanese Language Maintenance course. Descriptions of these courses, as well as the humanities and social science electives offered, are included in this report.

The International Design Clinic conducted design programs with an international perspective. This included both technical and entrepreneurial aspects. The 1993-94 Engineering Design Clinic Internship Program incorporated the international perspective for three (3) IEP seniors in particular and another 110 seniors in a mechanical, industrial, materials, and electrical engineering discipline in general. Activities were helpful in expanding the international influence throughout the Design Clinic curriculum. The international engineering program students were able to share their knowledge and experience of foreign countries with other engineers. Engineering students abroad were able to view our creative process in design as applied to real problems for industry. Nearly all of the 40 companies which sponsored projects this year had international markets.

As part of the IEP, students spend about five months working either in Japan or Germany. Students from the Class of 1994 were the first group to go overseas for the co-op experience.
Overseas Co-op Job Development is the most difficult and most important component of the program. Historically, American industry is slow to appreciate the importance of the overseas experience in preparing graduates for careers in the global market. Japanese and German transplant companies have been quite supportive. The economic situation in Japan and Germany and the unification of Germany and resulting shortage of jobs and housing has made finding suitable co-op assignments much more difficult than initially anticipated. So far we have been able to place all IEP student in co-op jobs overseas, though it required considerable effort.

EVALUATION/PROJECT RESULTS

Evaluation is a critical part of any project report. Major activities undertaken in the project were evaluated. These activities were designed to support the three main objectives of the project. Thus, major activity evaluation provides a means of determining the degree to which the project fulfilled its objectives. Evaluations of the program were developed, and the results are included in the report. Evaluation of the program based on input from other parties and information learned through experience is also included in the Evaluation section of this report.

The three main objectives of the International Engineering Program have been met. The IEP has been fully developed, implemented and institutionalized as a major program in the College of Engineering. Curriculum to implement language, culture, and history training with a focus on German and Japanese has been completed. Extensive activities related to this will be described in the report.

Considerable University and College of Engineering support and commitment of faculty involved in the program exists. In spite of a rigorous and demanding curriculum, student enrollment has increased steadily. Industry participation and support are also increasing steadily.

Dissemination activities that will be undertaken for this program include: publication of brochures and information sheets about IEP, dissemination of the final report to those who may want to undertake similar programs, and presentation and publication of scholarly papers.

Evaluation activities related to the major program features will continue. These evaluation activities will be designed to determine effectiveness of the program and ways to improve student learning.

SUMMARY AND CONCLUSIONS

In summary, the three main objectives of the program were met. As a result of this project, some of the insights gained relate to funds/financial support, language/culture training and program rigorousness, and co-op (internship) job placement.

A program like the International Engineering Program established in the College of Engineering at the University of Cincinnati is a resource-intensive program. Without continued University support, such a program cannot continue. Language/culture training adds to the rigorous engineering curriculum, and it can become a rather demanding undertaking. Only students with a high aptitude and who are able to undertake these activities are likely to succeed in such a program. One of the most crucial aspects of IEP is the five-month co-op experience either in Japan or Germany. This provides a unique experience for the students to live and work abroad in a much different setting than they would experience in the US. Host companies are required to pay sufficient stipends to the students to cover their living expenses abroad. In Japan, companies need to provide living accommodations and many other support activities to make this co-op assignment possible. Costs to the host companies are considerable. Placing students in these co-op jobs is indeed a very demanding and difficult assignment requiring well thought-out strategies and approaches.

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1.0 PROJECT OVERVIEW

This project, "International Engineering - A Focus on Manufacturing," began in September 1991. The objectives of this three-year project were:

- To fully develop, implement and institutionalize a unique International Engineering Program (IEP).
- To develop curriculum and to implement language and culture training programs with a focus on German and Japanese.
- To train engineers who have a global perspective.

In addition to the above objectives, this program was supplemented with additional funding for one year to focus on a program called TEMPUS (Trans European Mobility Program for University Students). The focus of the TEMPUS was on microelectronics education, an area critical to the manufacturing industry. A special section describing TEMPUS and the accomplishments of the program is presented in this report.

Several groups were served as a result of this project. These included students who actually participated during the first three years of the International Engineering Program at the University of Cincinnati, College of Engineering; faculty members who designed and implemented the various courses associated with the program; industry groups, both in the U.S. and overseas, that provided co-op (internship) opportunities for the students in the program; other University of Cincinnati colleges that are considering implementation of similar international programs; and finally, universities in the U.S. and overseas that may be interested in considering similar programs.

Outcomes as a result of this program include: specific activities undertaken to meet the objectives, problems encountered and solutions devised to resolve these problems, evaluation of the outcomes, suggested approaches for other universities and colleges considering similar programs, evaluation of various activities and plans for continuation and dissemination.

The breakdown of students in the College of Engineering, based on academic year 1993-'94, is shown in Exhibit 1, Appendix 1.

The first year, IEP had 10 students. This number has increased steadily to a total of more than 80 in the entire program. The number of students participating in the program and their graduating class years are summarized in Exhibit 2, Appendix 1.

Of the total number of students who have participated in the program, 32 percent are female. This is well above the 18 percent female ratio for the College. There are no minority students in the program, and recruitment of minorities is a current goal.

An overall schedule for the International Engineering Program is provided in Exhibit 3, Appendix 1

2.0 PURPOSE

To understand the objectives and the approach for this undertaking, it is essential to define and establish the need for the program. This type of an understanding is also essential to provide a rationale for others who may adapt this program for their own university or college.

Clearly, the United States of America is entering a "new world order," without its customary leadership in technology, industry, and economy. The changing international role of the United States demands that leaders of educational institutions ensure that their graduates have adequate knowledge of global issues (Smickler, Sommers 1989). In 1970, the United States had a higher GDP per capita than either Germany or Japan. By 1990, both had surpassed the United States in terms of GDP per capita, as indicated in Exhibit 4, Appendix 1.

In a modern global economy, international trade is essential for continued economic growth of a nation. This is indeed an era of international interdependence and increased competition; thus new leaders must understand these issues and possess international and global perspectives. Regarding the engineering profession, these concerns dictate an increased need for individuals not only with strong technical backgrounds, but also with the ability to function and flourish in multi-cultural competitive global environments.

The role of a university is to respond to crucial societal needs. Engineering today is practiced in an international environment and, therefore, increasingly subject to international competition (Pang 1989). The College of Engineering, with strong support from the University President, undertook activities to fully develop, implement and institutionalize an international program that included appropriate language, culture and history training, a design clinic with international perspective, and a five-month internship experience either in Japan or Germany. These countries were chosen because of their importance to U.S. international trade and their acknowledged technological leadership in modern engineering and manufacturing. Focusing on these cultures addresses the regions of the world where collaboration in science, industry, and technology transfer can be most beneficial to the manufacturing industries of America. Manufacturing industries in the U.S. dominated world trade for many decades. However, these industries are an endangered entity in the face of competition from around the world. To save them, American engineers and managers must become culturally mature, have cross-cultural communication skills, and first-hand experience of how foreign competitors function.

Additional reasons for choosing Germany and Japan included the ability of the University to build on the German and Japanese strengths available in the area. The University of Cincinnati has a very strong and well-known Department of Germanic Languages and Literature. The College of Engineering would not have been able to sustain the German focus of the program without the assistance of this department in the College of Arts and Sciences. Dr. Suzanne Shipley is Head of this department which consists of faculty who are active scholars and innovative, dedicated teachers. [The courses cover the entire spectrum of German literature to philology, from literary theory to business German.] The department also sponsors acclaimed international symposia. The department is strongly student-oriented. It is comparable to any graduate program in the country in providing theoretical and practical experience in the teaching of language and literature. The department maintains numerous contacts with other universities. While the program focuses primarily on training American students, they have also had students from Austria, China, Denmark, Germany, India, Sweden, Switzerland, and Yugoslavia. The availability of native German speaking faculty in the department has greatly enhanced the education received by students in the IEP. The Japanese Language Program in the College of Arts and Sciences is also now under the direction of Dr. Shipley. The Greater Cincinnati area is home to a large number of Japanese transplant companies. There are 21 companies in this area, employing a total of more than 10,000 employees. This has allowed us to independently arrange co-op opportunities for students in Japan, rather than engaging an outside agency as we have done with the Carl Duisberg Gesellschaft for German placements overseas.

3.0 BACKGROUND AND ORIGINS

This chapter discusses the International Engineering Program (IEP) origins, changes in organization policies that had to be made, other organizations and individuals that were involved in the program, and organizational and other support that made this program possible.

3.1 Origins

The origins of the program could be traced to the tradition of innovation in the College of Engineering. As an example, co-operative education (co-op) was established at the University of Cincinnati, College of Engineering, in 1906. It was the first such educational program in the nation. Since then, co-op has become the largest mandatory program of any public engineering school in the country. The International Engineering Program was just another undertaking in the innovative spirit of co-op education. Implementing this program with an international co-op component complimented and enhanced the existing engineering programs. It also helped the College in working closely with industries nationally and internationally.

3.2 Changes in Organization Policies

Universities face the challenge of finding ways to join the trend toward international and multi-cultural education. This includes understanding our multi-cultural selves as well as better understanding foreign cultures. To reach these goals, it is important that international curriculums be developed (Scott 1993). For the IEP to be implemented, a number of changes were made. These related to: language, culture and history curriculum development, changes to co-op schedules and engineering curriculum, development of co-op jobs overseas, and funding support for many of the program activities. The grant provided by FIPSE helped lay a strong foundation for this unique undertaking. The College of Engineering also provided needed funding support for the program.

The faculty within the College of Engineering and other colleges were very supportive of this program. In all committee meetings where curriculum changes were discussed, administrators and faculty members were supportive of the program and provided the necessary flexibility to make this program work.

3.3 Other Organization Involvement

Others involved in the IEP included the following: The **Operations Committee** acts as a forum for open discussion regarding the IEP challenges and problems. The Committee meets two to three times per year and includes the following individuals:

R.K. Jain, Associate Dean for Research and International Engineering (Chairperson)
G. Elliott, Program Coordinator
H. Carter, Engineering Faculty
G. Graen, Director, Institute for the Enhancement of International Competitiveness
B. LeMaster, Professional Practice Division
J. Muyskens, Head, Romance Languages and Literature
R. Schade, German Faculty
S. Shipley, Head, Germanic Languages and Literature
S. Summers, Engineering Faculty
S. Tong, Director, Asian Studies
L. Trent, Professional Practice Division
D. Vannoy, Associate Dean, Arts and Sciences

Faculty members included German and Japanese language faculty, guest lecturers, and humanities and social science faculty who developed specialized courses for this program. **Personnel** from

Professional Practice helped in placing students in co-op positions in the U.S. so that a modified schedule to meet IEP requirements could be met. **Japanese Program Development Specialist** developed excellent relationships with the Japanese companies and, thus, was able to place IEP students in co-op positions in Japan in spite of the serious economic problems in the host country. She was also responsible for coordinating various language, culture and history aspects of the program.

Industries included transplant companies from Japan and Germany and U.S. companies with international operations.

The **University Administration**, with full support of President Joseph Steger, who pledged personal and financial support for the program, and Dean Constantine Papadakis provided the Program Director (Associate Dean for Research and International Engineering) complete flexibility and all necessary College support.

The IEP is a resource-intensive program costing about $150,000 per year to maintain. University support included resources for language training, student travel stipends, and additional staff. The position of **Program Coordinator** for the IEP was created and funded with University general funds. Creation of this full-time position was one of the initial steps toward institutionalizing the International Engineering Program. The **Associate Dean for Research** was asked to assume further duties to include international engineering; this placed the program at a high administrative level. The tie-in of the International Engineering Program to the College's research program provides additional leverage that may not be found in a program that stands alone. This also enhances international research collaboration and faculty exchange opportunities.

Numerous **Staff Members** in the Office of the Associate Dean often take on added responsibilities to help support program activities.

3.4 Organizational and Other Support

FIPSE support helped undertake necessary activities in the initial stage of program development and, thus, helped lay a strong foundation for the future. Financial and organizational support was provided by the University President for the program and that support, though somewhat reduced due to budgetary constraints, still continues.

US industry provided financial support to the Program for the first two years through the President's Annual Business Campaign, and Japanese and German companies supported the program by providing overseas co-op positions for the students.

4.0 PROJECT DESCRIPTION

This section describes the main features of the project. **Assumptions** and **planning strategies** were that these main project features should be designed to support the three key project objectives described earlier in this report.

The intensity of this effort and resources required are reflected in the number of students enrolled (more than 80), the number of companies involved in providing co-op opportunities (13 in Germany, seven in Japan), student recruitment activities, efforts required for course development, international design clinic, co-op (internship) experience, and a one-year TEMPUS project in microelectronics education. All of these project features are described and discussed in the preceding sections.

4.1 Student Recruitment

International Engineering Program (IEP) recruitment activities include informational meetings at UC for high school counselors and teachers (two are held each year), mailing brochures to all students who apply for admission to the College, announcements to the German community through the Goethe Institute and the UC Germanic Languages and Literature Department, and informational meetings with the freshman class (one early in the Fall quarter and one at the start of the Spring quarter). In addition, mailing of more than 600 pieces is done in January of each year. Also, a general IEP brochure is sent to all students offered admission to the College of Engineering. This brochure has a return portion for students interested in receiving more information.

The International Engineering Program is designed to prepare young engineers for careers in the global market. The program is structured to provide engineering education so that students are technically competent and knowledgeable about and sensitive to other cultures. The program provides challenging and exciting opportunities for highly qualified students. To be admitted and remain in the program, participants must be honor students. This program is designed to train future leaders of America who would assist industry in competing successfully in the global market.

Information about the International Engineering Program is also included in a new information video for the College of Engineering. This video is used for recruiting purposes in the high schools throughout the area.

The grade point average (GPA) for admission to the IEP have been set at 3.0 (out of 4.0), and enrollment is limited to 30 students. Some students with a GPA less than 3.0, but possessing exceptional capabilities and potential, may be admitted on a provisional basis. This limit is necessary due to the shortage of good overseas co-op assignments. If industrial involvement grows, the limit will be relaxed accordingly. Students whose GPAs fall below 2.8 are placed on probation and must get their GPAs above 2.8 to work abroad (the last half of their junior year).

Students apply for admission during the spring quarter of their freshman year. If accepted, they must select Section I of the College of Engineering co-op option (work in the winter and summer quarters and school in the fall and spring quarters). These students interview for their UC co-op assignments during the fall quarter of their sophomore year and begin working during the following winter quarter.

An informational meeting is held in March of each year for all freshmen. Applications are completed at that time, and determination of acceptance into the program is made by May. Acceptance is based on academic achievement and student interest in international education. Academic standards for admission are clearly advertised and emphasized, and students with less than the standard generally do not apply. By working with faculty advisors, special efforts are made to recruit women and minority students.

4.2 Course Development

The following courses were developed for the program. Syllabi for these courses are included in Appendix 2.

1. **Introduction to International Engineering** has been developed and taught three times. The course is designed to provide IEP students with sufficient information about Germany and Japan to make intelligent decisions about their focus.

2. Two **intensive language courses** (Intensive Language/Culture I for Japanese and German) were developed and are taught for six weeks in August and September. In 1992, half of the students studying German had a significantly higher level than the other half. The German program ran two tracks, one beginner and one intermediate level. This required additional faculty and other resources. The German faculty thought it was worth the extra investment of resources and effort to have two tracks. In the future, if the same situation occurs because of the number of students who have had previous German language training, the intensive German language course will be conducted in two tracks. For the Japanese language, this is not likely to be a problem.

3. Two new courses, **German Speaking World I and II**, were developed and taught partially in German during the autumn and winter quarters. These courses are designed not only for language maintenance but also for learning more about German and European culture, geography and peoples. Conducting these courses in German was a unique experience for the students. It required considerable development and preparation time on the part of the faculty.

4. A **Japanese Language Maintenance Program** was conducted in autumn and winter quarters. A total of 20 hours were scheduled for this purpose during the first year. As described in Chapter 5 - Evaluation/Project Results, the Japanese Language Maintenance Program consisting of only 20 hours was judged inadequate; thus maintenance program hours were increased by fourfold to 80 hours.

5. **Intensive Japanese Language/Culture II** course was also developed. This course is conducted prior to the students leaving for the co-op assignment in Japan. Further details and objectives of this course are provided in the proceeding section.

6. IEP students have access to the required **Humanities & Social Science (H&S) courses** conducted at other colleges in the University. The engineering curriculum has to meet rigorous ABET (Accreditation Board for Engineering and Technology) requirements for engineering, humanities, and social sciences courses. The IEP curriculum had to be tailored to meet these requirements.

4.3 Course Descriptions

Introduction to International Engineering. This course was developed and taught for the first time in the fall quarter, 1991. The first year it was a non-credit seminar course required for all sophomores and was designed to introduce students to the language and culture of both Japan and the German-speaking people. An analysis of the course content indicated that this course needed to be modified to provide better intellectual content and appropriate academic credit. How this was accomplished is discussed in Chapter 5 - Evaluation/Project Results.

Intensive Language/Culture I. This is a six-week intensive language/culture course. Both the German and Japanese courses have been developed. These courses begin the first day of the third term during summer quarter (on or about August 10).

Both classes have a master teacher, a supervising teacher, and two graduate teaching assistants. In both cases, the emphasis is on the spoken language.

Language Maintenance. Because of the six-month gap between the two intensive language courses, some form of language maintenance is necessary. Two special sections of an existing course series (German Speaking World I & II) were redesigned to use the German language as instructional media. This was done to further increase the language abilities of the IEP students. These courses were offered during the fall and winter quarters with great success. In spite of these efforts, in evaluating the spoken German language training, some deficiencies were identified. To correct these problems, actions taken are described in Chapter 5 - Evaluation/Project Results.

The approach for Japanese language maintenance was quite different because the language proficiency of these students was lower than those studying German. During the first year, students met with an instructor for two hours every two weeks for a total of 20 hours of language maintenance during the fall and winter quarters. Although a course similar to the German track called "Japanese Speaking World" is desirable, the student language level was deemed not appropriate to develop and conduct such a course. Again, the spoken Japanese language training and maintenance were evaluated, and this aspect of language training was modified.

Intensive Language/Culture II. The final four weeks of intensive language training for students focusing on German Language/Culture takes place in Cologne, Germany. The Carl Duisberg Gesellschaft, in co-operation with CDS International, is assisting in this activity.

For Japanese, the focus was on work-related language and culture. After an evaluation of the students' proficiency in the Japanese language, Dr. Kinji Tanaka and Dr. Yukiko Hatasa determined that this program needed to focus on: engineering and technical work environment, organization culture, and language training. This was needed so that the students and the host company could benefit from the co-op experience in Japan. Some of the questions and issues related to engineering and technical work environment were: 1) How does the work environment differ in Japan? and 2) What are the crucial things that the students need to watch out for?

Copies of outlines for the courses developed for IEP (German and Japanese language and culture as well as the Introduction to International Engineering) are provided in Appendix 2.

Humanities and Social Science (H&S) Sequence - Culture and History. The courses considered to be appropriate for the focused H&S series were selected. These courses are described in Exhibits 5A and 5B, Appendix 1.

4.4 International Design Clinic

International Design Clinic conducted design programs with an international perspective. "In this global market, manufacturers cannot afford to ignore the revenue potential of foreign markets, the necessity of competing abroad to protect domestic share, or the advantages of learning the demands of customers in diverse markets" (National Academy of Sciences 1990). The International Design Clinic included both technical and entrepreneurial aspects. The first year, the focus was for the engineers to develop marketing and entrepreneurial skills so that they can understand the needs of the customer.

Dr. Valerie Perotti, who has taught in Hong Kong, Malaysia, Scotland, and Cambridge in the UK, conducted a seminar on communication skills. Mr. Earl Conway, Procter & Gamble, Corporate Quality Improvement Director, conducted a management skills seminar. Mr. Conway has worked extensively in Europe and also teaches a Total Quality Management graduate course at the University of Cincinnati. Mr. David Brewer, who is responsible for operation, distribution, quality assurance, and purchasing for Chiquita International Worldwide, discussed ideas about marketing. Mr. Gerald Zobrist, President and CEO, Zonic Corporation, conducted a seminar on

entrepreneurialship. His experience related to Japan and South America were key elements of his presentation.

The 1993-94 Engineering Design Clinic Internship Program incorporated the international perspective for three (3) IEP seniors in particular, and another 110 seniors in a mechanical, industrial, materials, and electrical engineering discipline in general.

The 1993 Autumn Quarter Seminar Series offered insights from distinguished speakers on global competition, international business, international communication, global marketing and economy, and World Wide Total Quality concepts.

Dr. Valerie Perotti discussed some of the language and cultural barriers, as well as the process of co-operation and coordination.

Mr. David Brewer conducted a seminar that included insights about global competition and the need for technology transfer and multinational Research and Development. He discussed how transfer has come about through the establishment of networks with universities and businesses abroad and how they bridge the many cultural and technical competence differences.

Tom Kurtz, Manager, World Wide Total Quality at Procter & Gamble Company, shared Total Quality concepts and principles applied to the students' design projects. He stressed the need for leadership in technology, forming successful relationships with international customers (understanding diverse needs), and the importance of understanding markets in foreign countries.

Dr. Ali Houshmand, Assistant Professor, Industrial Engineering at the University of Cincinnati, conducted a Seminar on ISO-9000 and International Standards. He also introduced ideas on "Capturing the Market in a Global Economy." Dr. Houshmand exposed the students to the evolution of quality management, the importance of experimental design, the understanding of changing customer needs, and the designing of measurement systems to enhance improvement in a global market.

Thomas Nies, President and CEO of Cincom Systems, Inc., one of the world's largest and most experienced software companies with more than 60 marketing and support locations around the world, gave a Seminar on entrepreneurialship and stressed the need to serve global markets. Nearly two-thirds of Cincom's revenue is generated in non-US markets. The company supplies software technologies in the areas of: database management systems; high-level application development languages; manufacturing applications; text processing and project management software on IBM, Digital, and UNIX platforms.

The 1994 winter and spring quarters were dedicated to practical engineering processes and applications by students forming multi-disciplinary teams to solve design problems for industry.

Civacon, a company that has supported the Design Clinic program for more than five years, served as a client for the Clinic's International Team. This team was composed of two IEP mechanical engineers (Drew Spaulding and Jennifer Miller) and one electrical engineer (Peter Boumis). This team was coached by Professor Quo, Mechanical Engineering, University of Cincinnati. The project objective was to define and develop technology suitable for electrically operating a tank truck vapor valve within a gasoline liquid/vapor environment.

The team communicated via fax and mail with students and Dr. Stanley Shyh-Chour Huang, Department of Mechanical Engineering at the National Kaohsiung Institute of Technology in Kaohsiung, Taiwan, who independently worked on the same project. The team shared its findings with the Taiwan team at midpoint, end of winter quarter, and its final report and conclusions, end of spring quarter.

Drew Spaulding, an IEP co-op in Germany and Jennifer Miller, an IEP co-op in Japan, also communicated and invited two German student engineers to participate in the Engineering Design Clinic program next year by working on a company project in Cincinnati or by consulting and coordinating the efforts by telephone, fax, and mail.

William Sprauer, another IEP mechanical engineering senior who co-oped for Linde and Wiemann Machine Tool in Germany, worked on a design project for the Modal Shop on a team with Doug Adams (ME) and Rich Bono (ME). This team's objective was to redesign and develop an accelerometer calibration system. This team also fabricated an operational prototype of an electromechanical accelerometer calibration system. Bill Sprauer was able to lend an international focus to the team by sharing his co-op experience in Germany with his teammates and how methods of project management differed from that in the US.

Dr. Max Brown, Professor and Director of the Engineering Design Clinic, and Ms. Seidman, Assistant Director, met with Igor Golovatyuk, Senior Advisor with the International Department in the Ukraine, to discuss possibilities of marketing P&G and other businesses that may have an interest in the Ukraine and that might offer projects with global concerns to the Clinic.

Activities described above were helpful in expanding the international influence throughout the Design Clinic curriculum. The international engineering program students were able to share their knowledge and experience of foreign countries with other engineers. Engineering students abroad were able to view the creative process in design as applied to real problems for industry. Nearly all of the 40 companies that sponsored projects this year had international markets.

Exhibit 6, Appendix 1 describes Clinic I, II, and III activities, and Exhibit 7, Appendix 1 provides a list of client company participants.

4.5 Co-op (Internship) Experience

As part of IEP, students spend about five months working either in Japan or Germany. Students from the Class of 1994 were the first group to go overseas for the co-op experience.

Overseas co-op job development is the most difficult and most important component of the program. Historically, American industry is slow to appreciate the importance of the overseas experience in preparing graduates for careers in the global market. Japanese and German transplant companies have been quite supportive. The organizational structure of most large American multi-national firms makes it difficult for them to arrange co-op experiences for IEP students with their overseas offices. In general, there has been more success with small to medium-sized companies because it is easier to discuss the program with their decision makers than it is with the large companies. A list of companies that have supported the IEP and have provided excellent co-op job opportunities for the students is provided in Exhibit 8, Appendix 1.

The economic situation in Japan and Germany, as well as the unification of Germany and resulting shortage of jobs and housing, have made finding suitable co-op assignments much more difficult than initially anticipated. So far we have been able to place all IEP student in co-op jobs overseas, though it required considerable effort. For example, an average of 50 companies were contacted for every student placed in a co-op position in Germany. This was made possible by the extraordinary assistance provided by Carl Duisberg Gesellschaft (CDG) in Köln, Germany.

Early during recruitment and orientation, students are told to expect to pay for their travel costs to and from the overseas co-op job, but they can expect to be paid enough to cover their living expenses abroad. However, in some cases, the employers provide transportation costs, especially if the student works for the same company in the U.S. as abroad. To ensure that all students who qualify for the program are given an equal opportunity to participate, the College of Engineering has provided 50 to 100 percent of travel costs for students who have requested assistance, based solely

on need. Members of the IEP Operations Committee screen the requests and make recommendations to the Associate Dean.

The difficulty associated with good job development is common to all similar international engineering programs in the US. It may be desirable to create a national clearinghouse for overseas co-op/internships that is connected in a reciprocal manner to other regions of the world. The NSF and the American Society for Engineering Education (ASEE) have been approached for sponsorship and administration of a national program for international education.

4.6 TEMPUS - Project in Microelectronics Education

A 1987 survey was conducted with chairpersons and faculty members of engineering departments of U.S. universities to examine the relation between the high proportion of foreign graduate students and the operation and quality of engineering education in the United States. Respondents believed that foreign students are an asset and that, without them, training and research would suffer (Barber, Morgan 1987). In conjunction with the International Engineering Program, the University of Cincinnati College of Engineering participated in the TEMPUS Program. TEMPUS stands for Trans European Mobility Program for University Students. As a part of this project, a TEMPUS project focusing on microelectronics education, critical to the manufacturing industry, was initiated with European universities such that it incorporated the TEMPUS objectives of mobility and cross-country and cross-continent aspects. Supplemental funding was provided by FIPSE to undertake this project during 1992-93 academic year only.

The microelectronics industry is critical to the economic future of the US. Just as this industry is critical to the manufacturing industry and the economy, the education of engineers capable of competing globally is critical to the industry in the US. There are differences in the educational approach used in Europe and the U.S. --- both have strengths and limitations. Participating in these TEMPUS projects allows us to develop an electrical engineering curriculum that incorporates the best of both approaches.

Many European universities, especially those in Eastern Europe, do considerable teaching and research in the area of mathematical verification of Very Large Scale Integrated (VLSI) designs. The digital system design process taught to the students is mathematically sound. On the other hand, U.S. universities tend to emphasize performance and time to market issues in the design process. Unlike the formal approaches used in Europe, such issues have traditionally been handled in a more ad hoc manner by U.S. researchers and educators. This difference of orientation is evidenced by the relatively large number of verification tools marketed by European computer aided design (CAD) vendors and almost none by U.S. CAD vendors. Fortunately, there is a good synergy between these two approaches, and CAD tools employing both methodologies will undoubtedly become more prevalent in the future.

Besides the VLSI CAD technologies, another thrust where more attention to engineering education and co-operation is needed is in the area of electronic standards. Obviously, to open new markets for electronic-based products, all parties (designers, manufacturers, users, systems integrators) must work with a common set of rules. U.S. industries are a driving force in establishing contemporary standards for electronics design and test for worldwide consumption. Now is the time for the U.S. and Western European educators to work together in establishing a standard base in the educational programs in Eastern Europe which is consistent with that used in the U.S. and Western Europe.

By teaming with the proposed TEMPUS groups, the best of both the U.S. and European worlds were brought to UC students, as well as to industrial partners, to improve the competitive advantage of the students, the domestic electronic CAD industry, and the electronic industry as a whole in this global and enlarging market.

Poland, Czechoslovakia, Hungary, and now the Baltic states have all selected the microelectronics industry as important to the future economy of their countries. Some countries will focus on the

design and fabrication, and others will simply be users of the technology; but in most cases the technology will be brought into these countries by joint ventures with Western European, American, and Japanese companies. In all of these countries, the educational systems for engineering education in microelectronics require a modernization of laboratory facilities and the curriculum before they are prepared to provide engineers for their own industries who are capable of working with Western engineers.

Global industry standards are being developed. If the U.S. is not actively involved, these standards could lead to incompatibilities with American standards --- think of the standards for television and how differences around the world have impacted that industry. We must avoid this same occurrence in the microelectronics industry, and American educators can play an important role.

Activities undertaken for the TEMPUS project include: university contacts, student exchanges, and joint course development. These activities are described in the following section.

University Contacts. Contacts were initiated with a number of eastern and western European universities in 1991 and 1992 to develop opportunities for College of Engineering students to attend school abroad for one or two quarters per year. The FIPSE grant was slated to partially fund this activity for one year and, since European interest seemed strongest in the electronics and integrated circuits area, Professor Harold Carter, Electrical and Computer Engineering Department (ECE), accompanied Professor Ken Challenger, former Associate Dean for International Engineering, on a trip to define mutual interests in July 1992. It was expected that several students from both Prague and Budapest would attend UC, Department of Electrical and Computer Engineering, in the spring and summer of 1993 and 1994. If funding for TEMPEST was extended, several UC students could attend Prague and/or Budapest in 1994. Funding was not made available for 1993-94 for this activity.

In March 1993, Professor Carter visited the Technical University of Budapest (TUB) and Czech Technical University (CTU) to further define and arrange co-operative activities between TUB and the University of Cincinnati College of Engineering (UC/COE) and between CTU and the UC/COE.

Accomplishments as a result of these meetings were to:

1. Identify the two students from each university who would be attending UC in summer or fall quarter.

2. Clarify the procedures for exchanging students between UC/COE and TUB and between UC/COE and CTU.

3. Identify the subject(s) and professors who will be collaborating on the development of a course of mutual interest between UC/COE and TUB and between UC/COE and CTU.

4. Explore appropriate activities and schedules that would not only strengthen the education of CTU and TUB, but also the educational quality of UC/COE.

5. Begin discussions with key professors on opportunities for research collaboration to aid educational quality improvements at UC/COE, TUB, and CTU.

Student Exchanges. Two students from Budapest and two students from Prague were invited to attend the ECE Department of UC the spring quarters of 1993. The universities at Prague and Budapest made the student selection. The students were in their fifth undergraduate year.

All courses taken at UC were graded by the instructors of those courses and forwarded to the students' advisors at their home university. Thus, the visiting students were fully integrated into the courses of interest and were treated in a manner similar to all other students.

A faculty coordinator at UC prepared, with each visiting student, a plan of course attendance and facilitated the matching of interested professors with the students to conduct the project activities. All planning was conducted prior to the student's arrival at UC to ensure no wasted time in the students activities. Thus, upon arrival at UC, each student knew the classes he/she would be taking, the project description to be carried out, and the professor who would serve as the project advisor.

All preparations and expenses for travel between Europe and Cincinnati for European students attending UC were borne by the International Office of the College of Engineering at UC. Also, living accommodations and a small stipend for food and personal items were provided during the school quarters while the students were at UC. Intra-US travel was not covered by UC, nor were living accommodations provided beyond a one-quarter period.

All necessary costs, including UC tuition, were covered by UC College of Engineering, International Office.

Joint Course Development. A considerable amount of time was spent by Professors Harold Carter, Michal Servit and Ondrej Blaha to reorganize the topics and schedule for coordinated development of a course. It was decided to create three course modules, each of which could be delivered in two weeks of three lectures each week. The three modules could be used together as part of a course on computer systems design and test, or separately as part of a logic design course, an architecture course, and a VLSI test and diagnosis course.

The three modules and their developers are described in the following table:

Module 1: An introduction to VHDL with emphasis on "structural" (versus "behavioral") description and simulation. Strong application to logic design to the RTL level is required. It is expected this module would be primarily used in a second-year logic design course. Dr. Carter developed a draft of this course.

Module 2: Computer architecture modeling and simulation with emphasis on control structures. One approach in this module is to explore ISA, datapath and control models, and behavior using VHDL. Emphasis was placed on control structures including FSM and simple microcode controller designs. It is expected this module would be used in a third- or fourth-year architecture course or a VLSI design course emphasizing the systems level of design. Dr. Servit developed this module.

Module 3: VLSI test and testability modeling and simulation. Possible concepts to explore are VHDL models of BIT/BIST such as full or partial scan, signature analysis, PLA test, and boundary scan. In addition, this module should address the use of WAVES for tester-independent test vector waveform description and application. It is expected this module would be used in a VLSI test and diagnosis course. Dr. Blaha worked on this module.

5.0 EVALUATION/PROJECT RESULTS

Clearly, evaluation is a critical part of any project report. Major activities undertaken in the project were evaluated. These activities were designed to support the three main objectives of the project. Thus, major activity evaluation provides a means of determining the degree to which the project fulfilled its objectives.

In the fall of 1993, an evaluation of the program was developed for the classes of 1994 and 1995. This tool was modified slightly to reflect the difference between one group that had completed an overseas co-op and one group that had just completed the language program, but had yet not been overseas. An analysis of this evaluation is provided in the Appendix.

As Appendix 2 indicates, student evaluations of the program have been high. In almost each area, students have consistently rated the program and language training excellent or good. As classes grow in size, evaluations will take on additional meaning. However, informal verbal feedback from students who will be completing written evaluations after the language training indicates a high degree of satisfaction with the program as a whole.

Critical Issues for **Continued Program Success** are discussed and comments regarding **Continuation** and **Dissemination** activities are also provided in the proceeding sections.

5.1 Student Recruitment

The International Engineering Program has served as a positive force in encouraging students to undertake engineering and science programs. Different activities undertaken for this purpose were described in the earlier chapters. An analysis of incoming IEP students was conducted.

Applications for the IEP received from Freshmen last spring indicate that 42 percent were aware of the program prior to choosing UC. Verbal conversations with students indicate that the IEP was a major factor in their selection of the University of Cincinnati, College of Engineering.

Recruitment of women has been extremely successful, but recruitment of minorities has not. We are working with the Assistant Dean of the Emerging Ethnic Engineering (E^3) Program to develop mechanisms to encourage minority students to participate in the program. Part of the difficulty is, although the College provides resources for language training as well as travel stipends for students in need, there are some additional costs incurred by the students in the form of one shortened co-op quarter to accommodate the language training and also reduced co-op salaries during the two quarters overseas. Most students in the College of Engineering rely on their co-op salaries to fund their schooling. For minority students, the financial burden is often greater. Working with the Assistant Dean and Director of the E^3 Program, we hope to obtain funds to reduce the financial burden and, thereby, encourage minority students to participate in the program.

Professor John Grandin provided comments relative to the current requirement that students must maintain a 2.8 or better GPA to remain in the program. His comments are summarized as follows:

Academic talent should not be the sole criterion for admission to the IEP. The most talented academic students can still fail in a new cultural environment, whereas an average student with the proper attitude might succeed in ways totally unforeseen according to the traditional academic yardstick. Reasonable criteria for admission could be:

- An eagerness to learn the language and culture of the chosen country and an openness to new ideas and different perspectives. For example, students must be tolerant, flexible, and willing to take unfamiliar paths.

- An understanding of and commitment to the goals of the program. Students must be aware that they may well be professionally called upon to work collaboratively with persons from other societies representing other cultural perspectives.

- The ability to effectively represent the University and the United States through tact and diplomacy. Students must be willing to see themselves as ambassadors and accept their time abroad as a responsibility and not merely a time for their own personal benefit. The wrong student can easily convince a company not to receive any future American interns.

- The ability to work independently. Most internship supervisors provide assignments with reasonable direction, but are often busy people with little time for hand holding.

- Assertiveness in seeking out personal relationships and activities independently. Other cultures often do not intrude on the privacy of others. Students who want contact with co-workers must be willing and able to take the initiative.

5.2 Course Development

Student evaluations were developed and completed for all courses. An analysis of the responses is provided in Appendix 3.

While the student evaluation of the **Introduction to International Engineering** was high, students indicated an interest in making this a credit course. The course syllabus was changed to include substantive material related to engineering training and practice in Japan and Germany, challenges related to working in a competitive global market, and impact of engineering and technology on societal development in Japan and Germany.

Intensive Japanese Language/Culture course development was a challenging task. Students had to learn three different alphabets (Hiragana, Katakana, and Kanji) and also learn sufficient Japanese language to be able to function well in a Japanese industry environment. At the completion of the first six-week program, student language proficiency was evaluated by two outside experts, (Dr. Kinji Tanaka, President Japan Research Center of Greater Cincinnati, and Professor Yukiko Hatasa, Purdue University). Their analysis indicated that the course did not adequately prepare the student in the Japanese language and culture related to the work environment. Consequently, after further study and analysis, a new program was developed that would respond to many of the issues dealing with engineering and technical work environment, organization culture, and oral communication in the work environment. **Language maintenance** that is conducted during the Fall and Winter Quarters was also judged to be inadequate. The number of student/faculty contact hours was increased from 20 to 80. Also, additional activities are being planned to provide opportunities for the students to interact with native language speakers.

A comprehensive evaluation of the **German language training** was conducted by Professor Suzanne Shipley, Head Department of Germanic Languages and Literature. A copy of the analysis is provided in the Appendix. As a result of this analysis and input received from the CDG in Cologne and co-op employers in Germany, IEP student-spoken German language proficiency was identified as one of the deficiencies. Classroom instructions were modified to address this need, and a new program of weekly German conversation meetings was initiated. These meetings included IEP students, other native German-speaking University students and IEP faculty.

An evaluation of the **Japanese language training** was also conducted. A copy of the analysis is provided in the Appendix. A more comprehensive evaluation tool for the Japanese language training is in the process of development and will be used for future language courses.

Professor Grandin provided the following comments regarding how to improve the current level of language preparation. Though there is little flexibility in the curriculum, it would be advantageous

to seek ways to provide the students with more exposure to the language before being sent overseas. The following might be considered:

- Recruit students into the program earlier and use a portion of the summer after the freshman year for the first language course. Offering the Introduction to International Engineering course in the freshman year would help create interest earlier.

- Recruit students into the program with a good language background from their high schools who could then begin at the intermediate level.

- Find ways to integrate more language learning experiences into the existing curriculum:

  Because it would be extremely difficult to incorporate additional language courses into the students' curriculum, ways of integrating language experiences into the existing curriculum could be developed. Language Across the Curriculum models have been developed at the University of Minnesota, the University of Rhode Island, and St. Olaf College. Consideration could be given to creating a series of one-credit language units to serve as supplements for existing courses in the engineering curriculum. For example:

  - A one-credit, one-hour-per-week calculus seminar taught in German could be made available to all students with intermediate background in German. The course could be taught by a German-speaking math faculty member or graduate student in conjunction with a member of the German language faculty. The course could be based on the content of the regular calculus course. Its primary goals would be to introduce students to the vocabulary and associated concepts in German and to provide an opportunity for conversational practice based upon this material. A secondary goal would be to reinforce the learning goals of the calculus class. The course could be cross-listed as both a math lab and a German language class.

  - Similar one-credit German Across the Curriculum units could be offered wherever German-speaking personnel is available to offer the course. One might consider similar units in math, physics, computer science, statistics, and so on. Such courses might also evolve in conjunction with courses in the general education curriculum (e.g., German history, politics, etc.).

5.3 Design Clinic

A **Design Clinic** with a focus on **international issues** was conducted as described in an earlier chapter. An evaluation of clinic activities indicates that international perspectives are now incorporated in a pervasive manner in the entire design clinic series. As a result, it is expected that not only the IEP students but also all other engineering students taking the Design Clinic Program will benefit from this activity. Design clinic activities will continue to be evaluated periodically, and when possible, supplemental funding will be provided to keep the international perspectives an important aspect of this program.

Professors John Grandin and Laura Pang had similar opinions and provided valuable insight regarding changes that could be made to the Design Clinic. The Clinic could be improved by incorporating more international material. Because engineers today often work with teams across national boundaries, the clinic should reflect the complexities of this challenge. Some ideas are as follows:

- Students could be asked to design products for the German or Japanese market and make their presentations to German or Japanese judges in their chosen language.

- A group of teams could collaborate through electronic communication methods while simultaneously working on a common design assignment. They might then present their

product jointly, or separately, if they decide upon variations of the product for their respective national groups.

Creating an international design clinic would reflect the realities of global business today and better prepare students for the future. It is recognized that these activities would not be simple to create and oversee. Though the students have had exposure to German and Japanese business and culture, they are far from being experts. Likewise, the faculty accustomed to design challenges from a traditional point of view would find it difficult to supervise such a multifaceted approach. International design represents a new and critical area of research and expertise. Interdisciplinary teams of engineering, business, and language/culture faculty experts will need to be created. Expanding the design clinic in this manner will help the program become more distinctive.

5.4 Co-op (Internship) Experience

The number of students participating in the IEP has increased steadily. The total number of students in the program now is more than 80.

A list of companies participating in the International Engineering Program was included in previous chapters. As discussed earlier, placing students in co-op positions in Japan and Germany is problematic. Considerable extra effort will be needed in the coming years to ensure that all the students are placed in meaningful co-op positions overseas.

5.5 TEMPUS - Project in Microelectronics Education

Numerous successful activities conducted under this project were described in the previous chapter. This project is an unexpected boost to the development of the International Engineering Program at the University of Cincinnati. Selecting the University of Cincinnati by the FIPSE project director for this effort is an indication of the Director's confidence in UC's ability to assume a leadership role in the area of International Engineering education. TEMPUS has provided an outstanding opportunity for students and faculty to work with European universities in developing unique and innovative courses in microelectronics, which are crucial for improving manufacturing productivity. Funding for only one year (1992-93) was provided for this aspect of the project. Proposals to seek funding support to continue these activities will be submitted when appropriate opportunities arise.

5.6 Critical Issues for Continued Program Success

Four critical issues for continued program success were identified. An evaluation of these issues is presented.

Funds/financial support. This is a resource intensive program. Without continued university support, this program cannot continue. Funding provided by FIPSE was most helpful to lay the foundation for the program. External funding to undertake focused activities for IEP is always helpful, and efforts will be made to secure this funding. Since this external funding cannot be assured, internal funding is, thus, essential to provide stability and continuity of the program.

Higher administration support of IEP is essential to institutionalize the program and to provide stability and continuity. Program benefits to the students, industry participants, and the University community in general were documented. This information will be widely distributed to assure continued support for the program. In addition, IEP activities will be integrated with other academic and research activities of the College so that this program further enriches other essential aspects of the College of Engineering and University mission.

Language/Culture Training. Numerous modifications and innovations for this aspect of the program were implemented. Another innovation worth exploring is the development of a set of electronic resources, especially for the Japanese language and culture training, to further augment

language and culture training. This would include a complicated multi-media approach to learning Japanese language and culture. This would involve digitizing existing slides, statistical charts and tables, graphics, and a full-motion video that focuses on various aspects of the Japanese language and culture. This could serve as a meaningful electronic resource for teaching and learning the Japanese language and culture. Either internal University or external funding for this aspect of the program will be sought.

Co-op Job Placement. The opportunity to work and live either in Japan or Germany is one of the most exciting and important aspects of the program. Providing this opportunity requires considerable investment by the host companies. With the economic problems in Japan and Germany, securing co-op positions will continue to be difficult. Information brochures describing the program and benefits to participating companies will be updated and distributed widely. Personal contacts will be made and relationships established with Japanese and German companies. Efforts will be made to assure that the companies are completely satisfied with the quality of the students placed in co-op jobs. Participant company contribution to international understanding as a result of this activity will also be emphasized.

Rigorous and demanding program. Many IEP students have indicated that the language and culture training, along with other IEP activities, has become a rather rigorous and demanding program. IEP student concern regarding this matter is understood and noted. Since this is an honors program, it is not surprising that it is a demanding program. To address this issue, only students with high aptitude and who are able to undertake these demanding requirements will be encouraged to apply for IEP. In addition, extra tutorial and educational activities for intensive language training will be undertaken to facilitate the language training.

5.7 Continuation and Dissemination.

The three main objectives of the International Engineering Program have been met. The IEP has been fully developed, implemented and institutionalized as a major program in the College of Engineering. Curriculum to implement language, culture, and history training with a focus on German and Japanese has been completed. Extensive activities related to this were described in the earlier chapters. In addition to the language, culture, and history courses with a focus on German or Japanese, various other activities were undertaken to provide students a global perspective. These activities included humanities and social science courses with international focus, a capstone design clinic involving international projects and companies, and a unique opportunity to live and work abroad as an intern with a company either in Japan or Germany.

Considerable University and College of Engineering support and commitment of faculty involved in the program exists. In spite of a rigorous and demanding curriculum, student enrollment has increased steadily. Industry participation and support are also increasing steadily.

Dissemination activities that will be undertaken for this program include: publication of brochures and information sheets about IEP, dissemination of the final report to those who may want to undertake similar programs, and presentation and publication of scholarly papers.

Evaluation activities related to the major program features will continue. These evaluation activities will be designed to determine effectiveness of the program and ways to improve student learning.

6.0 SUMMARY AND CONCLUSIONS

In summary, the three main objectives of the program were met. As a result of this project, some of the insights gained relate to funds/financial support, language/culture training and program rigorousness, and co-op (internship) job placement.

The International Engineering Program, as described here, is a resource-intensive program. Without continued University support, such a program cannot continue. Language/culture training adds to the rigorous engineering curriculum, and it can become a rather demanding undertaking. Only students with a high aptitude and who are able to undertake these activities are likely to succeed in such a program. One of the most crucial aspects of IEP is the five-month co-op experience either in Japan or Germany. This provides a unique experience for the students to live and work abroad in a much different setting than they would experience in the US. Host companies are required to pay sufficient stipends to the students to cover their living expenses abroad. In Japan, companies need to provide living accommodations and many other support activities to make this co-op assignment possible. Costs to the host companies are considerable. Placing students in these co-op jobs is indeed a very demanding and difficult assignment requiring well thought-out strategies and approaches.

Expanding interaction with industry, establishing industry advisory committees, and seeking support from IEP alumni groups as they establish themselves in leadership positions are some possibilities.

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APPENDIX 1

(exhibits)

EXHIBIT 1	College of Engineering Student Demographics
EXHIBIT 2	IEP Student Breakdown by Graduation Year and Focus Country
EXHIBIT 3	International Engineering Program Schedule
EXHIBIT 4	US/International Comparisons of GDP Per Capita
EXHIBIT 5	Humanities and Social Science Course Descriptions 5A: German Focus Course Descriptions 5B: Japanese Focus Course Descriptions
EXHIBIT 6	University of Cincinnati Engineering Design Clinic / Senior Internship Program
EXHIBIT 7	International Design Clinic -- Client Company Participants
EXHIBIT 8	Companies Utilizing IEP Students in Overseas Internships

EXHIBIT 1

College of Engineering Student Demographics

	Non-Minority Students		African American and other Minorities		Total Students	
	#s	%	#s	%	#s	%
Male	1,476	93	298	83	1,592	82
Female	116	7	59	17	357	18
Total	1,592		357		1,949	

EXHIBIT 2

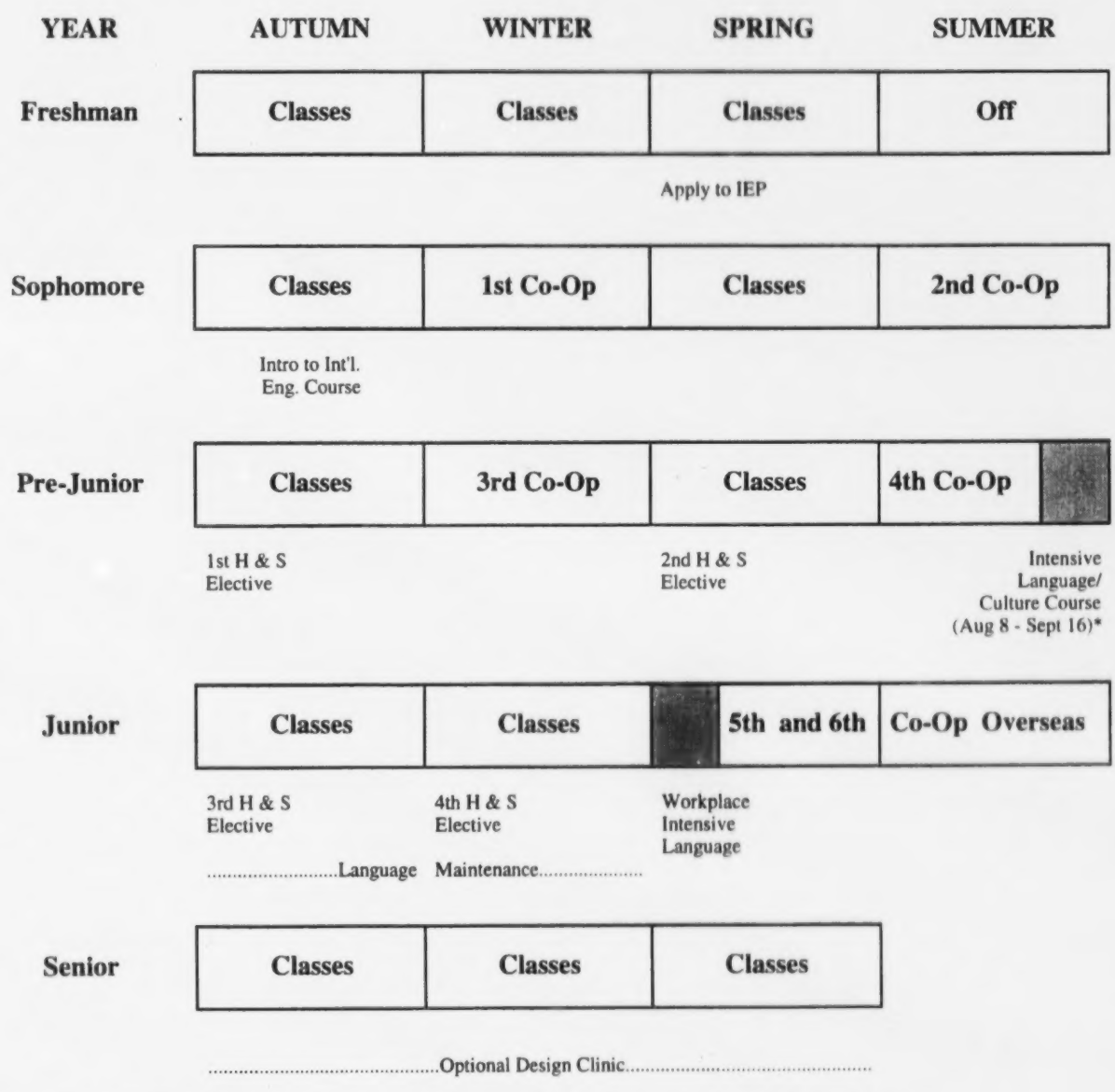
IEP Student Breakdown by Graduation Year and Focus Country

Focus	Graduating Class Year				
	1994	**1995**	**1996**	**1997**	**1998**
German	6	10	14	20*	26*
Japanese	4	7	6		

*Students have not yet declared a focus at this stage in their education.

EXHIBIT 3

International Engineering Program Schedule



*Dates given are for 1994. The language course begins each year on the first day of the third term of summer school.

EXHIBIT 4

US Comparisons of GDP Per Capita

1970	
Country	GDP Per Capita
United States	$7,428
Germany	$7,381
Japan	$4,662

1990	
Country	GDP Per Capita
Germany	$23,885
Japan	$23,558
United States	$21,663

*Statistical Abstract of the U.S., 1993 and 1981. U.S. Department of Commerce, Economics and Statistics Administration, Bureau of the Census.

EXHIBIT 5A

German focus
COURSE DESCRIPTIONS
(1994-95 academic year)

College of Engineering requirements in Humanities and Social Sciences (all majors) are as follows:

- A minim of 24 credit hours in Humanities and Social Sciences is required.
- At least 9 of the 24 credit hours must be in the Humanities.
- At least 9 of the 24 credit hours must be in the Social Sciences.
- At least 6 of the 24 credit hours must be credits earned in 200-level or higher courses.
- The 24 credit hours must include three different sequences with at least one sequence in the Humanities and one sequence in the Social Sciences. A sequence is defined as any two courses (6 credit hours) contained within the same number bracket on the Approved H/S List provided appropriate prerequisites are satisfied. These courses do not have to be sequential in number.

International Engineering Program H & S Courses are in two categories, *required* and *optional*, as follows:

(Please note: Information is subject to change; check Learning Opportunities for current information.)

Required: *International Engineering Program students with a focus on German are required to take ALL of the following H/S courses:*

- **Introduction to International Engineering, 20-031-245-901** 1 cr hr
  This is a seminar course which meets a total of ten hours during the Fall quarter.
- **Intensive Language/Culture, 15-010-161-301** 3 cr hrs - humanities
  This course meets 7 hours per day for 6 weeks, beginning the first day of the third term during Summer quarter (on or about August 8).
- **German Speaking World I (partly in German), 15-010-304-001** 3 cr hrs - humanities
  This course meets Tuesdays and Thursdays from 4:00 - 5:30 p.m. during Fall quarter and is taken following the intensive summer language course.
- **German Speaking World II (partly in German), 15-010-305-001** 3 cr hrs - humanities
  This course meets Tuesdays and Thursdays from 4:00 - 5:30 p.m. during Winter quarter. Prerequisite - German Speaking World I.

Optional: *International Engineering Program students with a focus on German are required to take TWO of the following H/S courses:*

German Studies (171 and 172 are NOT required prerequisites for 172 and 173):

- **Survey of German Culture I, 15-010-171** 3 cr hrs - humanities
  The origin of German Culture, institutions, social structures, philosophical and religious thought through the Baroque. Offered Fall quarter.

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- **Survey of German Culture II, 15-010-172** 3 cr hrs - humanities
  German contributions to Western civilization from the Age of Enlightenment to 1918. Offered Winter quarter.

- **Survey of German Culture III, 15-010-173** 3 cr hrs - humanities
  A cultural view of Germany from World War I to the present. Offered Spring quarter.

History: (Modern Europe offered only through Evening College in 1994-95, #s are 207, 208, 209)

- **Modern Europe: The European Community and its Expansion, 1500-1763, 15-075-107** 3 cr hrs - humanities
  Offered Fall quarter and Evening College. *(Not offered through Arts & Sciences in academic year 1994-95. Evening College course number is 30-075-207)*

- **Modern Europe, Old Regime and Revolution, 1763 - 1861, 15-075-108** 3 cr hrs - humanities
  Offered Winter Quarter and Evening College. *(Not offered through Arts & Sciences in academic year 1994-95. Evening College course number is 30-075-208)*

- **Modern Europe, Conflict and Revolution 1871-present, 15-075-109** 3 cr hrs - humanities
  Offered Spring quarter and Evening College (sometimes Summer quarter). *(Not offered through Arts & Sciences in academic year 1994-95. Evening College course number is 30-075-209)*

- **History of Germany, Rise of Modern Germany, 15-075-451** 3 cr hrs - humanities
  Legacy from the Middle Ages: impact of the Reformation; rise of Prussia and the problem of German particularism. Offered Autumn quarter.

- **History of Germany: The Nineteenth Century, 15-075-452** 3 cr hrs - humanities
  Impact of the French Revolution, growth of nationalism, the German Confederation, Austro-Prussian struggle for supremacy; the Bismarkian Empire. Offered Winter quarter.

- **History of Germany, The Twentieth Century, 15-075-453** 3 cr hrs - humanities
  World War I, the Weimar Republic, Hitler's Germany, and the aftermath. Offered Spring quarter.

Political Science:

- **Intro to International Relations, 15-085-180** 3 cr hrs - soc science
  Contemporary issues and problems. Basic factors influencing foreign policies and international behavior.

- **Intro to Comparative Government and Politics, 15-085-160** 3 cr hrs - soc science
  Fundamentals of comparative government institutions and political processes. *Prerequisite for 277.*

- **Government and Politics in Western Europe I, 15-085-277** 3 cr hrs - soc science
  A comparative survey of political institutions and processes in Germany, Great Britain and the European Economic Community. Offered Autumn quarter. *Prerequisite is 160.*

Revised 9-14-94

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EXHIBIT 5B

Japanese focus

COURSE DESCRIPTIONS

(1994-95 academic year)

College of Engineering Requirements in the Humanities and Social Sciences (All Majors) are as follows:

- A minim of 24 credit hours in Humanities and Social Sciences is required.
- At least 9 of the 24 credits must be in the Humanities.
- At least 9 of the 24 credits must be in the Social Sciences.
- At least 6 of the 24 credit hours must be credits earned in 200-level or higher courses.
- The 24 credit hours must include three different sequences with at least one sequence in the Humanities and one sequence in the Social Sciences. A sequence is defined as any two courses (6 credit hours) contained within the same number bracket on the Approved H/S List provided appropriate prerequisites are satisfied. These courses do not have to be sequential in number.

International Engineering Program H & S Courses are in two categories, *required* and *optional*, as follows:

(Please note: Information is subject to change; check Learning Opportunities for current information.)

Required: *International Engineering Program students with a focus on Japan are required to take BOTH of the following H/S courses:*

- **Introduction to International Engineering, 20-031-245-901** 1 cr hr
  This is a seminar course which meets a total of ten hours during the Fall quarter.
- **Intensive Japanese Language Culture I, 15-021-111-301** 3 cr hrs - humanities
  This course meets 7 hours per day for 6 weeks, beginning the first day of the third term during Summer quarter (on or about 8 August).
- **Intensive Japanese Language/Culture II, 15-021-112-301** 3 cr hrs - humanities
  This course consists of two parts as follows:
  1) 80 hours of maintenance, 4 hours per week, during Fall and Winter quarters
  2) 70 hours of maintenance, 7 hours per day for 2 weeks, beginning the first day of classes Spring quarter.

Optional: *International Engineering Program students with a focus on Japan are required to take THREE of the following H/S courses:*

Anthropology:

- **Peoples of Japan, 15-091-326** 3 cr hrs - soc sciences
  Reviews anthropological work on the nature of sociocultural systems of Japan. Attention to modernization and the maintenance of cultural integrity. Offered Autumn quarter alternating years ('94, '96, . . .).

Asian Studies:

- **Independent Work, Asian Studies, 15-021-481, 482, 483** 3 cr hrs - social sciences
  Independent research project requiring prior faculty approval. Please see Dr. Ravi Jain or Ms. Gayle Elliott.

Business Administration:

- **Japanese Management Style (listed as "Sp Top: Mgmt"), 22-415-593** 3 cr hrs - soc sciences
  This course is designed to teach the culture of Japanese management from a sociological and economics point of view. G.Graen is the instructor for this course. Offered Autumn quarter.

Geography:

- **Geography of Eastern and Southern Asia, 15-041-236** 3 cr hrs - soc sciences
  Ancient societies entering the Modern Age. Regional development and population pressure in Monsoon Asia. Can Asian cities feed themselves and avoid Western-style pollution. Offered Spring quarter and Evening College

History:

- **A History of Asian Civilization: Japan, 15-075-123** 3 cr hrs - humanities
  Evolution of a unique culture from the Heian period to the modernized Asian nation. Shintoism, cults of the emperor and the warrior, industrialization. Offered Spring quarter. *NOT OFFERED 1994-95.*

- **Rise of Modern Japan: 1830-Present, 15-075-664** 3 cr hrs - humanities
  A survey of Japan from the mid-eighteenth century to the present, with emphasis on how the Japanese society, culture, and economy underwent rapid transformation. Translation of Japanese works will be assigned as texts for discussion. Offered Autumn quarter. *NOT OFFERED 1994-95.*

- **East Asian History I*, 28-075-201** 3 cr hrs - humanities
  History of China, Japan, Korea and Vietnam from 500 B.C. to present emphasizing East Asian cultural heritage, the process of modernization and recent political developments. Offered Autumn quarter.

- **East Asian History II*, 28-075-202** 3 cr hrs - humanities
  Continuation of 28-075-201. Offered Winter quarter.

- **East Asian History III*, 28-075-203** 3 cr hrs - humanities.
  Continuation of 28-075-202. Offered Spring quarter.

Political Science:

- **Intro to International Relations 15-085-180** 3 cr hrs - soc science
  Contemporary issues and problems. Basic factors influencing foreign policies and international behavior. *Prerequisite for 386.*

- **International Relations in East Asia, 15-085-386** 3 cr hrs - soc sciences
  Pattern of international politics in East Asia; emphasis on post 1945 period. Offered Autumn and Spring quarters. *Prerequisite is 180.*

- **Intro to Comparative Government and Politics, 15-085-160** 3 cr hrs - soc science
  Fundamentals of comparative government institutions and political processes. *Prerequisite for 261.*

- **Government and Politics of Japan, 15-085-261** 3 cr hrs - soc sciences
  Political traditions, institutions, processes and major political issues. Offered Autumn quarter. *Prerequisite is 160.*

*Taught at Raymond Walters College

Revised 9-14-94.

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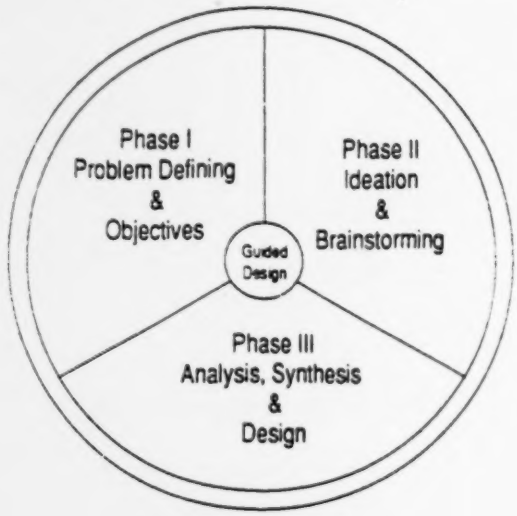
EXHIBIT 6

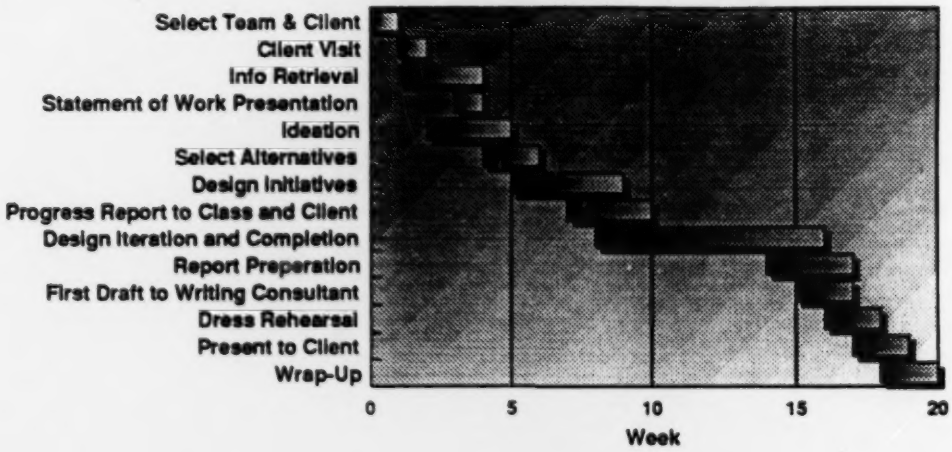
A Career Readiness Course (Clinic I)

Seminar Series



Competitive Design Project

Capstone Design Project (Clinic II & III)



Senior Design Internship Program

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UNIVERSITY OF CINCINNATI ENGINEERING DESIGN CLINIC
SENIOR INTERNSHIP PROGRAM CLIENT COMPANY PARTICIPANT LIST

AME Associates	Cincinnati Milacron	Dover Corporation/OPW	H.J. Heinz/Portion Pac	Miller Brewing Company	Seabrook Medical Systems
American Fan Co.	Cincinnati Test Systems	Durirron Inc.	Hill Rom	Milnes Consulting Service	Senco Products
American Thermal Instruments	Cintas Corporation	Eastman Kodak	Hillshire Farm & Kahn's	Monsanto Corporation	Springer School
Anatrol Corporation	City of Cincinnati OEM	Ethicon, Inc.	Hoffman Auto Racing	Motoman, Inc.	Sweco, Inc.
Aristech Chemical	Civacon	Ford Transmission Plant	Hydro Systems	NuSurg Medical Inc.	The Modal Shop Inc.
Arnold Gauge	Clark Material Handling	Frito-Lay, Inc.	John Morrell Company	Ohmart Corporation	Trackrider
Ashbury Energy Corporation	Contech Construction	G A Avril Company	Jordan Valve	Planet Products	United Air Specialists
Bavarian Trucking	Controlled Access	General Electric/Aircraft Engines	KDI Precision Products	P & G (Corp. Bldgs.)	University Hospital/Design
Belcan Engineering	Conway Industries	G E /Cincinnati Service Center	Konsal Research Associates	P & G (Main Office)	University of Cincinnati-Facilities Management
Butler Products	Cooper Industries	General Electric Revena Plant	Lehr Precision, Inc.	P & G (Sharon Woods)	US Precision Lens
Campbell Hausfeld	Copeland Corporation	General Motors	Lexmark, Inc.	P & G (Winton Hill)	Willard Industries
Caterpillar Logistic Services	Crane Connectors	Globe Products, Inc.	Mead Central Research	Raymond Walters College	Witt Company
Cincinnati Electronics	Cummins Engines	Golf Aerodynamics	Mead Imaging	R. Houston & Son Sandblasting	Wolf Mach/Best and Donovan
Cincinnati Gas & Electric Co.	Dayton Power & Light	Guardian Technologies	Mead Specialty Paper	Richard Industries	Wright Patterson Air Force Base
Cincinnati Microwave	Diamond Power Specialty Co.	Heart Consulting Services	Mid Valley Products Co.	Rotex, Inc.	Zonic Corporation

GRADUATE RESEARCH INTERNSHIP PROGRAM/GRADUATE STUDENT SUPPORT

Black Clawson	Ford Motor	International Trailer Metro	Newtron Products	Web Printing
Chase Duras	Futura Plastics and Engineering	Konsal Research Associates	Systech Environmental Corp.	XTEC Incorporated
Diamond Power Specialty	Health Technologies Systems	Landis & Gyr Powers	University Hospital	Zonic Corporation
Dover Corporation/OPW	Hillshire Farm and Kahn's	Miller Brewing Company	Vemay Laboratories	Milacron

QUALITY ENHANCEMENT/COST SAVINGS CLINIC

Cincinnati Bell Telephone	Clark Material Handling	Frito-Lay, Inc.	Lenscrafters, Inc.	Richard Industries
Cincinnati Electronics	Diamond Power Specialty Company	General Electric/Aircraft Engines	Ohmart Corporation	

VENTURE CLINIC

Projects in Progress

EXHIBIT 7

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EXHIBIT 8

Companies Utilizing IEP Students in Overseas Internships

GERMANY

- AGFA
- ANT-Bosch Telecom
- BMW
- Degussa AG
- GM Delco/Opel
- GM Packard/Reinshagen
- igus GmbH
- Ingenieurbüro
- Linde & Wiemann
- Lufthansa
- Nordson
- Robert Bosch Fahrzeugelektrik
- Stöber Antriebstechnik GmbH & Co.

JAPAN

- Ahresty
- IHI
- Andrew Jergens/KAO
- Kawasaki Steel
- LeBlond Makino
- NKK Steel
- Techniglass

APPENDIX 2

(course syllabi)

1. Introduction to International Engineering

2. German Focus
   - Six-Week Summer Intensive German Language Training
   - German Speaking World I - Fall Quarter
   - German Speaking World II - Winter Quarter

3. Japanese Focus
   - Six-Week Summer Intensive Japanese Language Training
   - Japanese Language Maintenance - Fall Quarter
   - Japanese Language Maintenance - Winter Quarter

INTRODUCTION TO INTERNATIONAL ENGINEERING

20-031-245-901

Professor: Ravi Jain, Associate Dean for Research and International Engineering
Professor, Civil and Environmental Engineering

Time: 5:00 - 7:00 p.m. alternating Thursdays

Text: Handouts and bibliography of reading material will be provided.

Course Description:

A series of seminars familiarizing the student with aspects of both German and Japanese culture, history, language and engineering practices. This will enable the student to decide upon which specialty to focus. 1 credit hour

Course Objectives:

- To introduce students to the International Engineering Program
- To discuss the importance and challenge of learning about other cultures
- To provide introduction to cultures of our major trading partners such as Japan and Germany
- To introduce students to engineering education and curricula in Japan and Germany

Class Schedule:

Date/Location	Topic
9/22/94 500 Swift	Engineering profession, engineering education, trends in engineering, international attitudes towards science and engineering, industrial productivity, global economy, perspectives on international engineering, introduction to the UC College of Engineering International Engineering Program
10/06/94 500 Swift	Experiences and challenges related to working in a global market - a German perspective Introduction to German engineering training and practice
10/20/94 500 Swift	Experiences and challenges related to working in a global market - a Japanese perspective Introduction to Japanese engineering training and practice
11/03/94 638 Rhodes	International/global perspectives: Impact of engineering and technology on societal development in Japan and Germany
11/17/94 500 Swift	Discussion of experiences with IEP students who have worked abroad as engineering co-op students
12/01/94 500 Swift	Presentation of student term papers

Course Expectations:

All IEP students are expected to attend all classes. Under extenuating circumstances, no more than one absence is permitted.

One term paper and a class presentation is required. The term paper is expected to be approximately four to five double-spaced, typed pages. Students will propose term paper topics for approval by the instructor by the third week. Some examples of the topics are: role of international education in society; role of engineering education in internationalizing society; engineering education in Europe or Germany or Japan, etc.; engineering education and cross-cultural communication. Students will have considerable flexibility in selecting a topic of their choice.

Class grade will be based upon class participation (20%), term paper (60%), and class presentation (20%).

9-19-94

INTENSIVE GERMAN LANGUAGE -- SUMMER 1994

Schedule for this summer's six week IEP Intensive German Course (08.08.-09.16. 1994)

Course number: 15-010-161 section 301
Instructors: Dr. Suzanne Shipley, David Coury, and Eckard Rademann (Supervisor)
Greg Redding (replacing Suzanne during the 2nd half)
Course books: Themen I+II (Textbook I+II, Workbooks I+II) plus 4 cassettes, one Grammar Workbook.

First three weeks:

900- 950	Suzanne: Grammar I + Introduction (one group)
1000-1050	David and Eckard: (two groups) Grammar application
1100-1150	Eckard and David: (two groups) Grammar application
1200-1250	Lunch (everbody present, and only in German)
1300-1350	Suzanne: Grammar II + Introduction (one group)
1400-1450	Eckard and David: (two groups) Tapes, etc.
1500-1600	Eckard and David: (one group) educational games

We will use Themen I (Kursbuch and Arbeitsbuch) during the first half of the course as well as a Grammar Workbook and audio/video tapes. (Themen II for the second half).
We will cover approximately three chapters per week.

Sample week:

Mon	Lektion 1
Tue	Review Lektion 1 (morning)
	Start Lektion 2 (afternoon)
Wed	Finish Lektion 2 (morning)
	Review Lektion 2 (afternoon)
Thu	Lektion 3
Fri	Review Lektion 3 (morning)
	Review for weekly quiz (afternoon)

Suzanne will teach Grammar I+II using the Grammar Workbook while at the same time introducing the corresponding material in the Kursbuch.

In the morning Eckard and David will apply the grammar with the help of the "Kursbuch" and audio tapes.

In the afternoon D+E will teach with the help of video/audio tapes and also get the students started in the "Arbeitsbuch" so that they will feel comfortable finishing the exercises as homework.
The homework assignments are due the next morning and will be corrected and returned by the three instructors at the end of each day.

During the final hour we will play eductional games, discuss slides and learn about German culture.

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The schedule of the second half of the course will look slightly different:

1. hour Greg: Grammar I
2. hour Eckard+David: Grammar application
3. hour David+Eckard: Grammar application
4. hour Lunch
5. hour David: Grammar II
6. hour Greg: German Culture
7. hour Eckard and/or David: Cultural Games

There will be several outings such as visits to the Cafe Vienna, the Art Museum, Findlay market plus picnic, etc. Due to these fieldtrips the schedule might be have to be silghtly altered.

The instructors will meet daily to discuss the agenda and homework assignments for the next day.

GERMAN WILL BE SPOKEN THE ENTIRE TIME, NO EXEPTIONS!!

German 15-010-304 - Autumn Quarter 1994
The German-Speaking World Today
(Section 002 for IEP engineers)

T & Th, 2:00-3:20, Old Chem 701

Instructor:

Professor Alan Galt
737 Old Chemistry
Phone 556-2760 (home office: 232-9242)
Office hours: M 3:00 - 4:00
T 3:30 - 4:30
W 3:00 - 4:00
Th 3:30 - 4:30
or by appointment

Required texts:

Michelin map of Germany (regularly)
Tatsachen über Deutschland, electronic version
Themen neu, 2 (occasionally, for leftovers)
Germany: Berlitz Travellers Guide (occasionally)
Coping with Germany (later in 1st quarter)

Course objectives

To prepare you to cope, linguistically and culturally, with Germany and the Germans when you arrive there in the Spring. An intermediate-level knowledge of German is assumed, based on at least the summer intensive UC course for engineers. The course is intended to help build a good general knowledge of Germany, especially its physical and political geopgraphy, while building vocabulary and fluency in German. Current news developments will be closely tracked. The second quarter will focus on the political system, economy, cultural traditions, societal structures, and a variety of additional current issues in Germany.

Assignments and grading:

You can expect regular reading assignments in Tatsachen über Deutschland ("Infotat") or other sources. You are also expected to follow current events in Germany in major newspapers and weekly news magazines, and to turn in each Tuesday a list of the articles referring to Germany which you have found, with one-sentence summaries.

In addition, you will present one oral report (3-5 minutes) and one written report (2-3 pages). The oral report will be in German, the written report may be in English, or in German if you wish. We will also have a written midterm exam and a written final.

Regular attendance and active participation are mandatory. For final grading, the components will be weighted approximately as follows:

1. News reading and class participation	30%
2. One oral report (1st half of qtr)	10%
3. One written report (2nd half of qtr)	20%
4. Midterm exam	20%
5. Final exam	20%

First assignment (for Tuesday, 9/27/93):

Thema neu 2, pp. 110-113

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Deutsch 304 - Die deutschsprachige Welt
Herbst 1994, Prof.Galt

Unterrichtsplan für die erste Hälfte des Quartals

Datum	Vorbereitung, Hausarbeit	Unterrichtsstunde, zusätzliche Materialien
Do 22.09.		Einführung in den Kurs
Di 27.09.	*Thema Neu, Kursbuch:* S. 110-113 *Deutschland Nachrichten:* "BGH erleichtert passive Sterbehilfe", S.7 Folie 18: "Die Altersversorgung"	Planung für alte Menschen
Do 29.09.	*Infotat* 0-2: Land und Leute	Geographie im Überblick: Entfernungen Folie 3: "Größe --Bevölkerung" Folie 2: "Die Bundesländer"
Di 04.10.	Text zu Folie 2: "Die Bundesländer" Nachrichtenbericht	Fortsetzung Geographie: Topographie im Überblick, historische Namen Folie 3: "Die Bundesländer im Überblick" Folie 4: "Die Länder der Bundesrepublik"
Do 06.10.	*Infotat* 6-11: Baden-Württemberg, Bayern, Berlin, Brandenburg Texte zu Folien 3 "Die Bundesländer im Überblick" und Folie 4 "Die Länder der Bundesrepublik"	Fortsetzung Geographie: Topographie, historische Namen Kartenarbeit: die Deutsche Generalkarte Folie 13: "Perspektivische Übersicktskarte"
Di 11.10.	*Infotat* 11-14: Bremen, Hamburg, Hessen Texte zu Folie 5 "Regionen, Flüsse und Kanäle" und Folie 14 "Die Flüsse" Nachrichtenbericht	Fortsetzung Geographie: Land- und Wasserformen Kartenarbeit: die Deutsche Generalkarte
Do 13.10.	---	Unterrichtsfrei
Di 18.10.	*Infotat* 14-17: Mecklenburg-Vorpommern, Niedersachsen, Nordrhein-Westfalen Texte zu Folien 15 "Die Bundesautobahn" und Folie 16 "Die Deutsche Bundesbahn"	Reiseplanung: Reisen mit der Bahn
Do 20.10.	*Infotat* 17-20: Rheinland-Pfalz, das Saarland, Sachsen Texte zu Folie 13 "Mit der Bahn unterwegs" und Folie 14 "Wie war's im Urlaub?"	Noch Bahnreisen
Di 25.10.	*Infotat* 20-23: Sachsen-Anhalt, Schleswig-Holstein, Thüringen	Nahverkehr: Bus, Straßenbahn, U-Bahn, S-Bahn
Do 27.10.	---	Zusammenfassung Geographie
Di 1.11.	Zwischenprüfung über Geographie der BRD	

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JAPANESE FOR IEP STUDENTS **COURSE SYLLABUS** 8/8 - 9/16, 1994

The purpose of this intensive session is to provide an learning oppotunity of Japanese language and culture for future interns of engineering fields in Japan.

Instructors: Language component — Junko Yoshida
Miki Yoroizuka
Culture component — Elizabeth Sato, Ph.D.

Classroom: 839 Baldwin Office: 630 Rhodes

Class Hours: AM 1) 9:00 - 9:50 PM 4) 1:00 - 2:00
2) 10:00 - 10:50 5) 2:00 - 3:00
3) 11:00 - 11:50 6) 3:10 - 4:00
Office Hours: by appointment

Course Objectives: 1)to acquire the four language skills(listening, speaking, reading, and writing)to be able to handle and survive everyday life in Japan. For that purpose listening and speaking are emphasized. 2)to acquire general knowledge of the Japanese people and their culture.

Textbooks: Language; Yukiko Hatasa, Communicating in Japanese (xerox materials)
Culture; The Japanese Today—Change and Continuity

Evaluation:		
	attendance and participation	30%
	quizzes and assignments	30%
	tests;a)achievement (written)	20%
	b)peoficiency (oral)	20%

Grades: A = 90% + B = 80%-89% C = 70%-79% D = 60%-69%

Attendance: You are expected to attend all classes and to be punctual. If you miss two days(12 classes),it will be considered that you have withdrawn from the course.

SCHEDULE

date	hr	content		date	hr	content	
8/8	1	Introduction,	J	8/15	1	Ch.1 Review	M
Mon	2	Sound & Writing System	J	Mon	2	Usage Test	M
	3	Hiragana 1	J		3	Free Conversation	M
	4	Hiragana 2	M		4	Ch.2 Voc.,Culture note	J
	5	Hiragana 3	M		5	Katakana(a — no)	J
	6	Expressions	M		6	Language 1	J
8/9	1	Review & Quiz Hira.1-3	J	8/16	1	Ch.1 Voc.Q.,Commu.St.	J
Tue	2	Hiragana 4	J	Tue	2	Language 2	J
	3	Expressions	J		3	Language 3	J
	4	Hiragana 5	M		4	Language 4	M
	5	Hiragana 6	M		5	Dialogu,Integration	M
	6	Expressions	M		6	VIDEO 1 (HW2)	
8/10	1	IEP Director, Dr. Jain		8/17	1	Ch.2 Review	M
Wed	2	Review & Quiz Hira.4-6	J	Wed	2	Usage Test	M
	3	Expressions	J		3	Listening, Reading	M
	4	Hiragana 7	M		4	Converstion	J
	5	Expressions, Review	M		5	Katakana(ha — n)	J
	6	CULTURE			6	CULTURE	
8/11	1	Review & Quiz Hira.1-7	J	8/18	1	Katakana Summary, Quiz	M
Thr	2	Ch.1 Voc.,Culture note	J	Thr	2	Ch.3 Voc.,Culture note	M
	3	Language 1	J		3	Language 1	M
	4	Language 2	M		4	Language 2	J
	5	Language 3	M		5	Language 3	J
	6	CULTURE			6	CULTURE	
8/12	1	Ch.1 Voc.Q.,Commu.St.	J	8/19	1	Ch.3 Voc.Q.,Commu.St.	M
Fri	2	Language 4	J	Fri	2	Language 4	M
	3	Language 5	J		3	Language 5	M
	4	Dialogue,Integration	M		4	Dialogue, Integration	J
	5	Listening, Reading	M		5	Listening, Reading	J
	6	Conversation (HW1)	M		6	Conversation (HM3)	J

Date	Hr	Content		Date	Hr	Content	
8/22	1	Ch.3 Review	J	8/29	1	Ch.5 Review	M
Mon	2	Usage Test	J	Mon	2	Usage Test	M
	3	Ch.4 Voc.,Culture note	J		3	Ch.6 Voc.,Culture note	M
	4	Language 1	M		4	Free Conversation	J
	5 & 6	Coversation Test	M		5 & 6	Conversation Test	J
		or Interview	M			or Interview	J
8/23	1	Ch.4 Voc.Q.,Commu.St.	M	8/30	1	Ch.6 Language 1	J
Tue	2	Language 2	M	Tue	2	Language 2	J
	3	Language 3	M		3	Language 3	J
	4	Language 4	J		4	Language 4	M
	5	Language 5 (HW4)	J		5	Language 5	M
	6	VIDEO 2			6	VIDEO 3	
8/24	1	Ch.4 Review	J	8/31	1	Ch.6 Voc Q.,Commu.St.	M
Wed	2	Usage Test	J	Wed	2	Dialogue, Integration	M
	3	Dialogue, Integration	J		3	Listening, Reading	M
	4	Listening, Reading	M		4	Conversation	J
	5	Conversation	M		5	Free Conversation (HW6)	J
	6	CULTURE			6	CULTURE	
8/25	1	Ch.5 Voc.,Culture note	M	9/1	1	Ch.6 Review	J
Thr	2	Language 1	M	Thr	2	Usage Test	J
	3	Language 2	M		3	Ch.7 Voc.,Culture note	M
	4	Language 3	J		4	Language 1	M
	5	Language 4	J		5	Language 2	M
	6	CULTURE			6	CULTURE	
8/26	1	Ch.5 Voc.Q.,Commu.St.	J	9/2	1	Ch.7 Voc.Q.,Commu.St.	M
Fri	2	Language 5	J	Fri	2	Language 3	M
	3	Dialogue	J		3	Language 4	M
	4	Integration	M		4	Language 5	J
	5	Listening, Reading	M		5	Dialogue, Integration	J
	6	Conversation (HW5)	M		6	Conversation (HW7)	J

date	hr.	content	
9/5	LABOR DAY HOLIDAY		
9/6	1	Ch.7 Review	J
Tue	2	Usage Test	J
	3	Free Conversation	J
	4	Ch.8 Voc.,Culture note	M
	5	Language 1	M
	6	VIDEO 4	
9/7	1	Ch.8 Voc. Q.,Commu.St.	M
Wed	2	Language 2	M
	3	Language 3	M
	4	Language 4	J
	5	Language 5 (HW8)	J
	6	CULTURE	
9/8	1	Ch.8 Review	J
Thr	2	Usage Test	J
	3	Dailogue, Integration	M
	4	Listening,Reading	M
	5	Conversation	M
	6	CULTURE	
9/9	1	Ch.9 Voc.,Culture note	M
Fri	2	Language 1	M
	3	Language 2	M
	4	Language 3	J
	5 & 6	Conversation Test or Interview	J

*Homework(HW1-10)is assigned the day before the chapter test, and reviewed before the test. See the workbook section in the text.

date	hr.	content	
9/12	1	Ch.9 Voc.Q.,Commu.St.	J
Mon	2	Language 4	J
	3	Language 5	J
	4	Dialogue, Integration	M
	5	Listening, Reading	M
	6	Conversation (HW9)	M
9/13	1	Ch.9 Review	M
Tue	2	Usage Test	M
	3	Ch.10 Voc.,Culture note	J
	4	Language 1	J
	5	Language 2	J
	6	VIDEO 5	
9/14	1	Ch.10 Voc.Q.,Commu.St.	J
Wed	2	Language 3	J
	3	Language 4	J
	4	Language 5	M
	5	Dialogue, Integration	M
	6	Listening,Reading (HM10)	M
9/15	1	Ch.10 Review	M
Thr	2	Usage Test	M
	3	Conversation	M
	4	Free Conversation	J
	5 & 6	Conversation Test or Interview	J
9/16	1	Ch. 11	J
Fri	2	Ch. 11	J
	3	Ch. 12	M
	4	Ch. 12	M
	5	Free Conversation	M
	6	Free Conversation	J

JAPANESE FOR INTERNATIONAL INTERNS- MAINTENANCE

The purpose of this session is to promote the maintenace of the material learned in the summer session.

Instructor:	Junko Yoshida	Office hours: by appointment
Classroom:		
Hours:	Tu, Th 3:00-5:00 p.m.	
Textbook	Xerox materials (Communicating in Japanese: A four Skills Approach)	
Recommended books	Makino, S. & Tsutsui S. 1986. A dictionary of basic Japanese grammar. Tokyo: The Japan Times	
	Mizutani, O & Mizutani Y. 1984. Nihongo notes 1 Å` 6. Tokyo: The Japan Times.	

Evaluation:

Participation	30% (Performance evaluated daily)
Quizzes	20%
Asignments	20%
Tests	30%
Grades	A = 90%+, B = 80%+ C = 70%+, D = 60%=, F=59.9%-

Schedule

Date & Hour	Content	Quizzes	Assignement
9/23	Introduction & Chapter 1		
9/28	Chapter 1	Vocabulary	Tape Exercise & Composition
9/30	Chapter 2	Vocabulary	
10/5	Chapter 2		Tape Exercise & Composition
10/7	Chapter 3	Vocabulary	
10/12	Chapter 3		Tape Exercise & Composition
10/14	Chapter 4	Vocabulary	
10/19	Chapter 4		Tape Exercise & Composition
10/21	Chapter 5	Vocabulary	
10/26	Chapter 5 & Midterm exam (1 hour)		Tape Exercise & Composition
10/29	Chapter 6	Vocabulary	
11/2	Chapter 6		Tape Exercise & Composition
11/4	Chapter 7	Vocabulary	
11/9	Chapter 7		Tape Exercise & Composition
11/16	Chapter 8	Vocabulary	
11/18	Chapter 8		Tape Exercise & Composition
11/23	Chapter 9	Vocabulary	
11/30	Chapter 9		Tape Exercise & Composition
12/2	Final Examination (2 hours)		

JAPANESE FOR INTERNATIONAL INTERNS- MAINTENANCE

The purpose of this session is to improve communicative skills in Japanese for survival purpose as well as sustain the maintenance of material introduced in the summer session and the fall quarter.

Instructor:	Junko Yoshida	Office hours: by appointment
Classroom:	TBA	
Hours:	*Mon. 5:00pm ～ 6:00pm & Wed.4:00pm ～ 6:00pm*	
Textbook	Xerox materials (Communicating in Japanese: A four Skills Approach)	
Recommended books	Makino, S. & Tsutsui S. 1986. A dictionary of basic Japanese grammar. Tokyo: The Japan Times	
	Mizutani, O & Mizutani Y. 1984. Nihongo notes 1 ～ 6. Tokyo: The Japan Times.	

Evaluation:	Participation	30%	(Performance evaluated daily)
	Quizzes	20%	
	Assignments	20%	
	Tests	30%	
	Grades	A = 90%+, B = 80%+ C = 70%+, D = 60%=, F=59.9%-	

Schedule

Date & Hour	Content	Quizzes & Assignement Due
1/3 (月)	Introduction	
1/5 (水)	Chapter 10 Vocabulary, Culture, Language	
1/10 (月)	Chapter 10 Language	Vocabulary Chapt. 10
1/12 (水)	Chapter 10 Language	Vocabulary Chapts. 1, 2, 3
1/17 (月)	Martin Luther King Day Holiday	
1/19 (水)	Chapter 10 Kanji, Reading, Listening	Workbook Exercises
1/24 (月)	Chapter 10 Communication, Integration	Lab Exercises
1/26 (水)	Chapter 10 Test & Chapter 11 Vocabulary, Culture	
1/31 (月)	Chapter 11 Language	Vocabulary Chapt. 11
2/2 (水)	Chapter 11 Language	Vocabulary Chapts. 4, 5, 6
2/7 (月)	Chapter 11 Language	Workbook Exercise
2/9 (水)	Chapter 11 Kanji, Reading, Listening	Lab Exercise
2/14 (月)	Chapter 11 Communication, Integration	
2/16 (水)	Chapter 11 Test & Chapter 12 Vocabulary & Culture	
2/21 (月)	Chapter 12 Language	Vocabulary Chapt. 12
2/23 (水)	Chapter 12 Language	Vocabulary Chapts. 7, 8, 9
2/28 (月)	Chapter 12 Language	Workbook Exercise
3/2 (水)	Chapter 12 Kanji, Reading, Listening	Lab Exercise
3/7 (月)	Chapter 12 Communication & Integration	
3/9 (水)	Chapter 12 Test	

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APPENDIX 3

(student evaluations)

1. International Engineering Program
   - Class of 1994
   - Class of 1995
2. German Language Training
   - Evaluation Form
   - Evaluation Results - Class of 1995
   - Evaluation Results - Class of 1996
3. Japanese Language Training
   - Evaluation Results - Class of 1995

INTERNATIONAL ENGINEERING PROGRAM EVALUATION RESPONSES

CLASS OF 1994

Country of Focus: Germany 2 Japan 2

	Excellent	Good	Fair	Poor
The opportunity to experience another culture through an overseas co-op assignment was	4/100%			
The engineering experienced gained during my overseas co-op assignment was	3/75%	1/25%		
The language training received from the University was	1/25%	3/75%		
German Focus Only: The language training received in Cologne, Germany was		1/50%	1/50%	
If I had the opportunity to start over, I would participate in the IEP	Yes: 4/100%		No:	

The following information would have been beneficial to me prior to going overseas:

Germany:

- Office dress code -- also the fact that they only wear gym shoes and sweats for *sport* and not out in public per say.
- I was well prepared for the six months in Germany. There were hundreds of things that I learned but now it is difficult to remember what I didn't know before.

Japan:

- Learning the difference between the shinkansen and the local trains (what each one looks like.)
- The only information that would have been nice to know would be regarding my pay situation. However, that is something that should have been handled by LeBlond. My culture training and language training were extremely helpful. I didn't feel any culture shock.

Suggestions for improvements to the International Engineering Program:

Germany:

- A more aggressive approach from IEP to find companies which will take co-ops in the US and overseas. More frequent communication with students. Immediate follow-up when students return. This form should be filled out at the beginning of the year. Mandatory interviews with students for report about experiences, opinions, and suggestions. Mandatory written reports from students -- otherwise there is not documentation about where we were and what we did. Regular communication with students during overseas co-op -- news from home, address and phone number of all other IEP students.

Japan:

- The only thing I would stress is STUDY VOCABULARY! The only other thing that should be improved in the language maintenance, though it sounds like that has been very much improved.

INTERNATIONAL ENGINEERING PROGRAM EVALUATION

CLASS OF 1995
(evaluation completed prior to students' departure for overseas internship)

Response by Country of Focus: Germany 5 Japan 2

	Excellent	Good	Fair	Poor
The language training received from the University was	4/57%	3/43%		
My experiences with the IEP over the past few years have been	1/14%	5/72%	1/14%	
The IEP is a(n) _____ tool for recruitment of prospective students	3/43%	4/57%		
If I had the opportunity to start over, I would participate in the IEP	Yes: 7/100%		No:	

Suggestions you have for changes or improvements to the International Engineering Program:

Germany:

- Recruit students with prior German experience. Better out line the costs of the program.
- Move the German Speaking World after the co-op. Give us more warning about money.
- German Speaking World is great for cultural/geographic knowledge, but doesn't offer enough practice speaking German. Because the German students program were organized through CDS/CDG, communication was less clear and sometimes difficult.
- German Speaking World could stand to have a more participation-oriented format and perhaps a smaller class.
- More language maintenance and information about everyday life in Germany as opposed to German history lessons which most of us have already had in Modern European History.

Japan:

- Japanese students would benefit from the same program the Germans had in the Rhine Room. An opportunity to talk Japanese in a non-classroom environment would be a great help. More meetings and contact are needed at an earlier stage. During my freshman, sophomore and pre-junior year I had little contact with anybody from the IEP office. At time, it made me feel lost and out of touch with the program. Everybody involved with the IEP is to be thanked for their tremendous help. Everybody is doing a great job and I think this program is really going to work. Terry Jain was a great addition to the program -- extremely beneficial to the Japanese students. Gayle's quick response to all our questions is also appreciated. Therese often took weeks to get an answer from.

Sept. 17, 1993 **Anonymous Evaluation Form**

Intensive German for Engineers at the University of Cincinnati

Please rate the usefulness, novel approach, and practical application of the intensive 6-week course.

I. Approach: using German exclusively to learn German was: (explain your answer)

□ Very helpful □ helpful □ not helpful (confusing)

_____

_____

_____

_____

II. After studying each chapter I received a clearer/ better understanding of the problem areas and grammar items presented during class.

□ True □ False

III. I would recommend this class to other Engineer students. Explain.

□ True □ False

IV. a)The evaluation method (testing) accurately assesses what I have learned in class.

□ Yes □ No

b) Are you in favor of a pass/fail grade or a letter grade? (circle one)

V. What did you like the **most/** the **least** in this intensive German course:

a)
b)
c)
d)

VI. Was the length of each day:

a) adequate b) too long c) just right

VII. Were all instructors well organized and did they use class time efficiently?

VIII. **Strengths:**

IX.**Weaknesses of this course**:

X. Other relevant comments: you can use the **back of the sheet** as well for comments/suggestions/complaints). For example: What would you add next year, etc.

Evaluation of Intensive German for Engineers at the University of Cincinnati

Class of 1995

Please rate the usefulness, novel approach, and practical application of the intensive 6-week course.

I. Approach: Using German exclusively to learn German was (explain your answer):

very helpful 8/100% helpful 0 not helpful (confusing) 0

Comments:

- Being immersed in German gave us an idea of what we can expect when we go to Germany. It taught how to look for key words to gain an understanding of what someone is saying
- Having no other distractions was very useful. Having more time would be more useful, however. Perhaps if we could take second year German or perhaps conversational German as a follow-up.
- The immersion that we experienced was very helpful because of the large exposure to the language. It was at times confusing of course. However, since the book was in English I could use it to clear things up.
- For me this was four weeks of review and two weeks of learning and both were very effective.
- The first week might be better off with more English to help build a foundation . . . (perhaps).
- Considering the short time we had to learn it was almost the ony approach that could be taken. The book was a good supplement to the teaching.
- I'm very glad we had to speak only German -- we learned more this way. I feel extremely comfortable with the language (except for some grammar things which will come with time, I hope).
- There are some things that should be explained in English, however, such as strong and weak adjective endings and complex ideas that help students understand the overall picture better.

II. After studying each chapter I received a clearer/better understanding of the problem areas and grammar items presented during class:

True 8/100% False 0

Comments:

- I wish that earlier on you might have had us spend some time each night previewing the concepts for the next day.

III. I would recommend this class to other Engineering students. Explain.

True 7/100% False 0

Comments:

- In today's global market knowing another language is an invaluable asset and the opportunity to work in a foreign country only intensifies it.
- Only if they were willing to go through the extra effort. This was very difficult for me.
- Most definitely, however, I would like the people who have had the class get together with the incoming students to discuss some survival techniques that may make it easier for the new students and teachers.
- This is the way to learn a language.
- Only for those who want international experience.
- I would suggest doing some studying before like listening to tapes.
- This is the best way to learn German -- and hopefully remember it.

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IV. a. The evaluation method (testing) accurately assesses what I have learned in class

Yes 5/71% No 2/29%

b. Are you in favor of a pass/fail grade or a letter grade?

Pass/Fail 7/87% Letter 1/13%

V. What did you like most/least in this intensive German course:

Most:

- Instructors, being immersed in the language, fast pace, the amount I learned.
- The immersion aspect; the lunch together - it helped me climb the learning curve and helped to gel the group; the patience of the four teachers.
- The intensive nature; the helpful, caring, effective teachers.
- The amount of knowledge gained; the support and help available; the small class size.
- The variety of instructors for dialect exposure; the way the day was set up learning grammar and conversation.
- I liked speaking during lunch, etc.; the small groups were great -- a "one-on-one" atmosphere was achieved; situation conversations were helpful.
- Having four instructors was very good; having breaks was good; getting drilled by Eckart sharpened the vocabulary.

Least:

- I would have liked to know exactly what was going to be covered the next day, such as telling us the pages that were going to be covered.
- That students coming into this class try to learn German the way they learn Engineering.
- Not enough "time" to let it get ingrained

VI. Was the length of each day:

adequate 1/14% too long 0 just right 6/86%

VII. Were all instructors well organized and did they use class time efficiently?

- The instructors were very well organized and used the time effectively.
- Yes (4 responses)
- Excellent instruction

VIII. Strengths of the course:

- Enthusiastic instructors, well organized, small group -- close to one-on-one instruction.
- A total immersion into the subject, combined with the fact that this is our only class made this an extremely productive six weeks for me.
- Excellent patience and encouragement, while being firm and having much intent.
- This class does a good job in quickly building a foundation for future learning.
- The teachers were very helpful and enthusiastic about the program. The structure of the day was good. The class size was very good, hjowever, I think this is about the largest it could be.
- Small class size, enough people teaching so individual attention was available.
- Experience of instructors, positive attitude and patience and enthusiasm of instructors. The fact that the class was every day for six hours.

IX. Weaknesses of the course

- Testing methods -- there should be more testing of our communication skills.
- It's just too short -- I wish that I could have had German in high school or college before this class so that I could have used this unique and, in my opinion, excellent learning environment to get to a fluency level rather than only to a beginner level.
- Emphasize the pieces of sentences more and how they can be put together, then students can take one part at a time (emphasize part order).

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- I think it would be helpful to review the grammar before going nach Deutschland.
- There simply isn't enough time to learn all the language we need to know.
- The last week was hard to get through because we had learned so much in so little time, it was hard to learn more.

X. Other relevant comments:
- I felt like I needed a vacation. If the class were extended a few weeks with a small break in the middle, it might be better. We would have more time to practice the language and would not get too "burned out".
- You might try to introduce technial or engineering vocabulary so we would have something to refer to later -- workplace vocabulary -- maybe handouts with this information on them.

Evaluation of Intensive German for Engineers at the University of Cincinnati

Class of 1996

Please rate the usefulness, novel approach, and practical application of the intensive 6-week course.

I. Approach: Using German exclusively to learn German was (explain your answer):

very helpful 8/89% helpful 1/11% not helpful (confusing) 0

Comments:

- Overall, I think that exclusive German is a good idea. It helps both direct and passive learning (i.e., words are used in the class that are not necessarily part of the course material). Of course, sometimes the use of English is a must, e.g., when a technical or difficult word cannot be explained in German.
- It puts your mind totally in German, but I feel that the grammar should also be explained in English for clarification.
- Wir müssen immer Deutsch sprechen und das hilft mir, bisser Deutsch zu lernen..
- But still sometimes an explanation in English could avoid additional confusion that is generated by explanations of German in German.
- Being forced to speak German really helped me to remember to learn the vocabulary.
- By only speaking German, the class was able to learn much faster. The German only format forced people to learn.
- I think that sometimes we should have been able to use English. At times, some were so lost for so long yet -- if it had just be explained/translated in English we could have gained so much more during that time instead of being totally clueless.
- I think that the class is best taught completely in German. Although at the beginning I was very confused, now I can understand almost everything that is said. If I don't understand something, I can ask in German now, which is great.
- Necessary to achieve our goal.

II. After studying each chapter I received a clearer/better understanding of the problem areas and grammar items presented during class:

True 8/89% False 1/11%

Comments:

- The workbook stressed more vocabulary than grammar.
- The books were very good, but I didn't study much.

III. I would recommend this class to other Engineering students. Explain.

True 9/100% False 0

Comments:

- Everyone should learn a foreign language and culture to better understand the world as it approaches a global economy.
- Diese kurs ist eine gute Erfahrang.
- This was a relatively fun and extremely useful class.
- For six weeks I learned very much.
- This was a super class! I learned alot in a short amount of time.
- I would recommend the class to students because it is a great opportunity to learn another language and culture. Also, it gives people a chance to see another part of the world and it's fun!
- I would recommend IEP and this course is excellent.

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IV. a. The evaluation method (testing) accurately assesses what I have learned in class

Yes 8/89% No 0 No Answer 1/11%

Comments:

- I wouldn't use the word "accurately" but it is a very good indication of our performance.

b. Are you in favor of a pass/fail grade or a letter grade?

Pass/Fail 6/66% Letter 3/33%

Comments:

- I think everyone takes the class to learn as much as they can, and that the grade is only to verify the class was taken
- I don't have a preference, but I would want the choice of a pass/fail grade.

V. What did you like most/least in this intensive German course:

Most:

- I thought the German during lunch was particularly helpful. It keeps the students in a German frame of mind. The teachers were prepared. The fun and the people in the class!
- I thought the last hour was sometimes wasted. I think Greg should have been more interactive with the students for the cultural lecture. We should do more role playing.
- Ich liebe die Erhanrung. Ich möchte mehr Hacky spielen. Die Lehrere waren sehr hilfslich. Die klasse, macht spaß.
- I liked the professors' attitude. All "professors" were very friendly and helpful..
- Acting out situations was extremely helpful.
- Only German spoken. Student to teacher ratio.
- Enthusiasm of teachers. Organization.
- Liked teachers; they were very good and very helpful.

Least:

- The course was too intensive, too many words per week to memorize.
- Almost always homework took about three hours for me. In the beginning, I would have liked everyone to be more flexible about explaining things in English when asked.
- Disliked eating lunch together in German, but it was helpful. Disliked 7 hours a day, but that is necessary.

VI. Was the length of each day:

adequate 3/34% too long 2/22% just right 4/44%

Comments:

- A bit too long in the later weeks.
- Maybe not that it was to long, but it got too monotonous. Too much of us sitting while the teacher lectured. We need to stand and practice practical situations more so as to improve and to not become bored and restless.

VII. Were all instructors well organized and did they use class time efficiently?

- Yes, David, Eckard, Frau Shipley, and Greg all seemed to know what they are responsible for teaching.
- Yes, definitely (4 responses).
- Ja.
- YES, in such an intense course, talking about "things out of class" is beneficial.

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- All of the teachers were very organized. Frau Shipley & David were especially patient with us. We should have used our time practicing speaking more; not just a short conversation, but situation. It would have been very beneficial if we could have more frequently met with advanced German students to practice. It's great that the teachers really involve themselves with the students. (E.g., meeting with us at Uncle Woody's or having a get-together at their house.) That makes a difference because I feel that if I need any help with my German in the future, I can ask any of them for help.

VIII. Strengths of the course:

- Obviously the intense nature is the biggest asset. In such an atmosphere, it is impossible not to learn. Also, I thought the cultural field trips were useful. They not only gave us insight into areas that engineers often do not experience, but also provided a welcome and essential break from the everyday grind. Also, I think the rapport the teachers have with the students was essential.
- The course totally taught in German. Lunch.
- Wir haben viel Deutsch gelrnt in nur sechs wochen.
- This course has given me a relatively big knowledge of German in a short period of time..
- Speaking German all day -- even during lunch and hackey sack. The teachers are excellent. Easy to interact with and very encouraging.
- Interest of teachers, intensity of class.
- Much covered in an easy way, great teachers, the books were easy to read.
- All instructors were very organized and were prepared for something else if we finished early. The grammar, I thought, was very important. Of course, all types of speaking exercises enhance this.
- Good mixture of all vocal and "useful situations", i.e., train station, restaurant . . .

IX. Weaknesses of the course

- Almost none.
- Grammar could be explained a little better, maybe break up into small groups for that too.
- Die klasse brancht mehr Frauen.
- Little more explanations in English would be helpful.
- I would have liked more practice of situations without using the book.
- Length of the day (but necessary), could use a break in middle of course.
- Too little oral practice.
- We only had time to practice a few types of situations, we would be in; for example in a restaurant, and in the Bahnhof, etc., there may be more situations we could have done? I don't know.

X. Other relevant comments:

- We need more cassette conversations with a written transcript to help with pronunciation.
- I would prefer to have a class in German before the intensive one.
- This class should not be intense. Then, the current intense class could be a little less intense.
- The program would be better if it was more weeks with a week or two break in the middle.
- It would have been great to go to an authentic German restaurant or other place where people normally speak German.
- Great course.

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INTERNATIONAL ENGINEERING JAPANESE PROGRAM EVALUATION

Language Training Evaluation

Class of 1995
(evaluation completed prior to students' departure for overseas internship)

Total Responses Received: 6

		Excellent	Good	Fair	Poor
Six-week Language / Culture Training Aug.-Sept. 1993					
Language	Instructor 1		3 / 100%	2 / 33%	1 / 17%
	Instructor 2	6 / 100%			
	Instructor 3	5 / 83%	1 / 17%		
Culture	Instructor 4	6 / 100%			
Language Maintenance					
	Instructor 1		5 / 83%	1 / 17%	
Two-week Language / Culture Training March-April 1994					
Language	Instructor 1	1 / 17%	4 / 66%	1 / 17%	
	Instructor 2	6 / 100%			
Culture	Instructor 3	6 / 100%			
	Instructor 4	1 / 17%	5 / 83%		

INTERNATIONAL ENGINEERING PROGRAM EVALUATION
General Comments and Suggestions for Improvements
Class of 1995

- All in all it is an excellent program that I am proud to be a part of. I would like to able to help next year's students.

  Engineering-sponsored post-Japan maintenance classes would be ideal. Otherwise, it would be nice if Yoshida-sensei is sure to teach the A & S-sponsored 200 or 300 level Japanese that we would be taking.

  Again, I attribute the success of this year's class t Dr. Jain, Gayle, and Teri-san. I whole heartedly thank you all for your effort and devotion. You have been very accommodating when we have concerns or conflicts. I thank you again.

  Teri-san, I think you for understanding my situation with Toyota and doing so much to try to get them involved with the program. I will try to apply whatever influence I may have also. Domo Arigató Quazaimasu!

- Honestly, we were frightened when Therese was dismissed, but we now realize that it was for the best. Teri, Dr. Jain and Gayle have done wonders with the program. Things have been run very efficiently and everyone has been very helpful.

  The few improvement points I can think of include: 1) company reps who visit for mixers, parties, etc. are generally ignorant about the U.C. engineering program in general. Therefore, they cannot begin to understand the IEP. 2) All suggested/required IEP classes should be placed on the approved H/S list, at least for IEP students.

  The classroom maintenance classes, taken simultaneously with a full engineering load, are, I think, counter productive. Trying to learn more Japanese without the time to put into it only makes us forget the information we have already learned. A total conversation atmosphere would be better, I believe. (Similar to the German section's "trinken und essen".)

- This is an excellent program with few mistakes. As far as the language training, a suggestion would be to have an alternative or more than one teacher available to answer questions. In particular, the language maintenance session. This would provide better understanding of the language. Also, a stronger concentration on speaking would be of great help.

  Culturally, I think I have learned alot about Japan and am very excited. I also think that you have been alot of help as far as finding jobs and dealing with the problems that have developed.

- The "paperwork" side of the program was handled extremely well. Gayle took care of just about all of our questions.

- I have noticed a large improvement in the structure of the program. I feel there is still some work to be done as far as the maintenance, but Hatasa had mentioned she hired someone new, which is good. I feel the connections with the Japanese companies, especially the transplants, need to be strengthened. Students in later years should be able to work at the same company in the U.S. and Japan. Also, I think the Japanese companies should be pushed to commit earlier. Although all of us have jobs, I think the language program would have been more beneficial if we had known all along that we would be going.

  Overall, I hope the program can continue because it is very good.

- The six week language was excellent. The teachers did a wonderful job of teaching us the basics. I feel we learned alot of vocabulary and grammar, but it was lost somewhat because we did not get to use it extensively in conversation.

The maintenance course was not as productive as it could be due to the large course load of classes we were taking. I feel it would better serve us if we could take it instead of one of the regularly scheduled classes.

The two week course allowed us to refresh our use of most topics and did an excellent job on the culture side of the class. I feel I can be involved socially without feeling like I will offend someone. The teachers were great and I felt they did a good job with relating to the class.

- We need some more teachers at U.C. (Chikamatsu if possible.)
- A casual meeting once a week would be helpful.
- After returning from Japan, it would be nice to continue studying Japanese. It would be much more beneficial to have a Japanese language teacher who only taught IEP students instead of taking Japanese through the Asian Studies Department. It is much easier to learn Japanese in a group of 7 people as opposed to a large class. Also, if the class is only engineers, then the language training can be oriented towards technical Japanese words and terms.

The Germans had speaking sessions in the Rhine Room which they said were extremely beneficial. I think our Japanese would also improve if we had the chance to speak in a relaxed situation. The classroom is fine, but a chance to have "normal daily conversations" outside the classroom would be great.

Without Teri I don't think this program would have been so successful. Her help with the IEP is greatly appreciated.

The language maintenance was necessary and very helpful, but trying to carry a full engineering load with Sato's class and language maintenance is very difficult. Fall and Winter quarter some of us had 22 to 24 credit hours which is very difficult in engineering. Maybe Sato's class can be taken sophomore year so that Junior year is free for only language maintenance. If I would have not had Sato's class, I could have put more effort into my Japanese.

- Japanese students would benefit from the same program the Germans had in the Rhine Room. An opportunity to talk Japanese in a non-classroom environment would be a great help. More meetings and contact are needed at an earlier stage.

  During my freshman, sophomore and pre-junior year I had little contact with anybody from the IEP office. At time, it made me feel lost and out of touch with the program. Everybody involved with the IEP is to be thanked for their tremendous help. Everybody is doing a great job and I think this program is really going to work. Terry Jain was a great addition to the program -- extremely beneficial to the Japanese students. Gayle's quick response to all our questions is also appreciated. Therese often took weeks to get an answer from.

- Recruit students with prior German experience. Better out line the costs of the program.
- Move the German Speaking World after the co-op. Give us more warning about money.
- German Speaking World is great for cultural/geographic knowledge, but doesn't offer enough practice speaking German. Because the German students program were organized through CDS/CDG, communication was less clear and sometimes difficult.
- German Speaking World could stand to have a more participation-oriented format and perhaps a smaller class.
- More language maintenance and information about everyday life in Germany as opposed to German history lessons which most of us have already had in Modern European History.

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